REPORT BY THE

CENTER FOR COLLABORATION IN GOVERNANCE

ASSISTING PUBLIC AND PRIVATE AGENCIES AND INTERESTS TO COLLABORATIVELY INNOVATE IN CREATING THE FUTURE.

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The primary rapporteur with respect to this Report has been Lindell Marsh, Executive Director of CCG, while the facilitators of the Dialogue sessions also included Alejandro Camacho, Director and Elizabeth Taylor, Staff Attorney, Center for Land Use, Environment and Natural Resources at UCI Law ("CLEANR[1]") ; Timothy Male, Associate Director for Conservation and Wildlife, White House Council on Environmental Quality; and Martin Wachs, PhD, Distinguished Professor, Emeritus, University of California (who also contributed significantly to the funding and finance portions of this Report);

And with major contributions to the Dialogue Sessions and, in turn, to this Report from:

Edward Boling, *Deputy Solicitor for Parks & Wildlife*, U.S. Department of the Interior and, currently, *Deputy General Council*, White House Council on Environmental Quality;

Dennis Grossman, *Senior Advisor*, Environmental Science and Policy, California Strategic Growth Council;

John Hopkins, Ph.D., California Coalition for Habitat Conservation (with respect to the experience and concerns of the Coalition);

Susan Hori, *Partner*, Manatt, Phelps and Phillips LLP;

Jaimee Lederman, *Attorney and Ph.D. candidate*, Luskin Center for Public Policy, UCLA (particularly with respect to funding and finance);

Ya-Wei Li, *Senior Director of Endangered Species Conservation*, Defenders of Wildlife;

Jim Lyons, *Deputy Assistant Secretary*, Land and Minerals Management, Department of the Interior;

Timothy Male, *Associate Director for Conservation & Wildlife*, White House Council on Environmental Quality;

Therese O'Rourke Bradford, *Area Manager*, Bureau of Reclamation;

Lynn Scarlett, *Managing Director*, Public Policy, The Nature Conservancy;

James R. Strittholt, *President and Executive Director*, Conservation Biology Institute;

Douglas P. Wheeler, *Partner,* Hogan Lovells - US, LLP; and,

David Zippin, *Vice President*, ICF

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PURPOSE

In July, 2015, 32 key staff of interested federal and State agencies, public and private "stakeholders," and academic researchers, gathered for a "conversation" on the Future of Habitat Conservation Planning (HCP), hosted by the President's Council on Environmental Quality (CEQ), in collaboration with the Center for Land, Environment and Natural Resources (CLEANR) at University of California, Irvine School of Law (UCI Law) and the Center for Collaboration in Governance (CCG).

This conversation was the most recent in a series of four dialogue sessions convened by CLEANR and CCG on the Future of Habitat Conservation Planning (HCP Dialogue). In addition to the CEQ "conversation", sessions were held in Sacramento, California (December 2014) and at UCI Law (February, 2014 and December, 2015). Ancillary to these sessions, smaller meetings and interviews on related topics were held in Washington, D.C., including meetings hosted by the Environmental Law Institute (ELI) focused on multi-agency permitting coordination, and with USDOT, FHWA and AASHTO (all acronyms are defined on page 11) focused on advanced landscape-level wildlife habitat mitigation/conservation in concert with infrastructure development.

This Report is a synthesis view of the HCP Dialogue to date based on the sessions convened, interviews, contributions and related research.[2] A list of those participating in the four sessions of the HCP Dialogue is included in Appendix A.

ACRONYMS

- **AASHTO**: American Association of State Highway and Transportation Officials.
- **BLM**: Federal Bureau of Land Management
- **CDFW**: California Department of Fish and Wildlife
- **CEQA**: California Environmental Quality Act
- **CWA**: Federal Clean Water Act
- **CZMA**: Federal Coastal Zone Management Act
- **DOI**: United States Department of the Interior
- **DRECP**: Desert Renewable Energy Conservation Plan
- **EPA**: United States Environmental Protection Agency
- **ESA**: Federal Endangered Species Act
- **ITP**: Incidental Take Permit under ESA, Section 10(a)
- **FHWA**: Federal Highways Administration
- **FLPMA**: Federal Land Policy and Management Act (Pub.L. 94 579) regarding federal lands managed by BLM)
- **HCP**: Habitat Conservation Plan
- **LLC**: Landscape Conservation Cooperatives
- **MBTA**: Migratory Bird Treaty Act
- **NCCP:** California Natural Community Conservation Plan
- **NEPA:** National Environmental Policy Act
- **SAMP**: Special Area Management Plans under CSMA and CWA
- **USACE**: United States Army Corps of Engineers
- **USDA:** United States Department of Agriculture
- **USBR**: United States Bureau of Reclamation
- **USDOT**: United States Department of Transportation
- **USFS:** United States Forest Services
- **USFWS**: United States Fish and Wildlife Service
- **USGS:** United States Geological Survey

Executive Summary:

This report tells the story of what we have learned from the four dialogue sessions convened over the past two years.

HISTORY

The first HCP was approved more than 30 years ago in March, 1983. It addressed the "ecological community" of the 3,000 acre San Bruno Mountain area and concerns regarding potential urban development on its slopes. Since that time, HCPs have become the major approach for local, state and federal agencies, together with public and private interests, to collaborate in addressing wildlife conservation in concert with development. As the concept matures, it is outgrowing the ad-hoc manner in which such plans have been crafted, funded and managed (in relation to other plans and regulatory programs). This Dialogue, and the Report below, focus on innovative next steps in the furthering this concept and way of working.

LARGE SCALE CONSERVATION

HCPs have been utilized to support single project incidental take permits. However there are now more than 25 million acres across the nation covered by large-scale or area-wide HCPs (either completed or in process), providing for the conservation of hundreds of species. These include urbanizing areas in California, Texas, Florida, and Washington: timberlands in the Pacific Northwest; inter-state utility lines in the Midwest and eastern States; renewable energy projects (22.5 million acres in the California Desert alone); fly-ways in the Midwest; and major river-ways (the Colorado and the Santa Ana). These are in addition to multi-state plans and conservation efforts such as those relating to the Chesapeake Bay and its watershed, the South Florida Ecosystem Restoration Project and plans to address concerns related to the conservation of the Greater Sage-Grouse (see Case Studies in Chapter 3).

APPROACH

The conceptual elements of the HCP approach are:

- a geographic plan, collaboratively developed by those from the constituency of affected agencies and interests; and,
- an accompanying implementation agreement (IA), providing the basis for multi-agency regulatory approvals and permits (including, e.g., incidental take permits (ITPs) issued by USFWS under Section 10(a) of the ESA and, where applicable, state regulations.

Above: *Infrared image looking over San Bruno Mountain to the San Francisco Bay.*

San Bruno Mountain Habitat Conservation Plan (HCP): the "model HCP multi-angency/interest effort to conserve "ecological communities" in concert with anticipated deveopment.

--H.R. Rep. No 997-835 (1982), U.S.C.C.A.N. 2807, 2830.

Above left: *Mission Blue butterfly (Plebejus icarioides missionensis)*

Above right: *Calippe Silverspot butterfly (Speyeria callippee callippee).*

Images of Endangered butterflies protected by the San Bruno Mountain HCP.

Above: *Hooper's Island*
Blue Heron Hiding in Chesapeake Bay Watershed HCP
Photo source: Chesapeake Bay Program

FRAMEWORK

Moving beyond the ad-hoc application of the HCP concept, six elements are called for:

1 | Early broad-scale (statewide) science and mapping focused on eco-regions and systems, in anticipation of possible future infrastructure, development, and other human effects, and with a view of identifying species, habitats, areas, and foci of state-wide and regional ecological concern (that will provide information in support of more focused efforts, e.g., areas of critical concern or anticipated areas of anticipated conservation or development);

2 | Regional scoping of the conservation of eco-systems in anticipation of possible development and taking into consideration other concerns such as population growth, air quality (including climate change), transportation, and water, food, and energy supply.

3 | Early establishment (ideally at the State/federal level) of information/mapping systems regarding State and regional eco-systems in relationship to anticipated infrastructure and development, together with the identification of areas calling for a next, more focused, level of planning - with participation by affected agencies and interests.

Above: *Florida Panther*
The Florida Panther habitat was preserved by efforts by the South Florida Ecosystem Restoration Task Force
Photo source: South Florida Water Management District

4 | Early landscape-level land acquisition and conservation (together with advance mitigation) prior to institutional or physical changes that would result in the further fragmentation of land ownership or use or in the inflationary affects of anticipated development;

5 | Early funding and financing mechanisms (for early science and mapping and the acquisition of habitat and conservation lands) with the development of mitigation banks and credit pools to, in part, expedite and contemplate infrastructure, development and other human activities; and,

6 | Increased collaboration among affected "silo-like" agencies and interests, and the exploration and implementation of the principles and processes, made possible by information technology, that make such collaborations work e.g., dialogue and the use of scoping, pilots and models.

These "elements" may be part of a broader overarching framework (by agreement among State/federal agencies, and others) or may be developed as "tools" in support of conservation efforts, including HCPs. These elements will make HCPs more effective and efficient (reducing costs and time required for the implementation of infrastructure and other development) - allowing us to focus on other priorities.

Chapter One: Introduction

THE CHALLENGE

A powerful image emerged from the HCP dialogues. In the late 1900s, Northern California experienced the "battle of the inland sea"[3] in which towns and farmers fought against the floodwaters flowing off the northern Sierras that inundated their communities and cultivated lands. Initially, in an ad-hoc manner, one levee was built at a time and then several and finally, programmatically, a whole system of levees and waterways were constructed -- with State and federal participation and support. It was the same story with wells and canals to provide water in support of agriculture in the San Joaquin Valley and urban development in Southern California. Initially farmers sunk wells one-by-one and diverted streams, until finally, they came together with the State and federal governments to programmatically build one of the most advanced flood control and water distribution systems in the world. The result is the world's most abundant breadbasket and one of the foremost economic engines in California.

Of course, there is a significant difference between these efforts and those discussed below. The difference is that the Northern California efforts focused on development and "infrastructure": dikes, levees and channels, with little, if any, consideration of wildlife habitat. The Northern California effort proceeded without the appreciation that such development may have led to overdevelopment, the loss of habitat, (including the loss of an entire ecosystem, e.g. the Owens Valley) and the very need for the ESA (with its focus on the conservation of "threatened" and "endangered" species).

Clearly, there is significant change afoot. We as a country have become increasingly concerned about wildlife and eco-system conservation and, in the spirit of the first HCP, are focused on addressing the need for such conservation in concert with infrastructure, development and other human effects at the local, State and federal levels.[4] Further, there are increasing and related concerns regarding our growing population, air quality (including the effects of climate change) and the availability of energy, food and water, all summarized as a concern for "sustainability".

Some have suggested that conserved habitat or eco-systems can be viewed as "infrastructure"; however, this may not be quite right. Concerns regarding conservation and sustainability tend to be cautions and predictably will be viewed increasingly together with proposed development. In this light, the first HCP and others that followed can be viewed as early pioneering efforts of an increasingly "programmatic" practice, but one that has been narrowly focused (that is, focused on the reconciliation of wildlife and eco-system conservation with human development and activities). This has been an important step, but it is important to keep in mind that we are modeling approaches that may be called for in the future to address other aspects of "sustainability". Key benefits of this practice include greater flexibility and increased coordination and collaboration among local, State and federal agencies and interests, utilizing common, flexible, multiple party agreements to provide coordination and assurances for both the public and private sectors, resulting in greater sustainability, efficiency and predictability for all.

The evolution of the Northern California efforts to manage storm water provides the proper perspective that is: innovatively working together programmatically

As a Nation, we have a growing concern regarding wildlife and eco-system conservation in relationship to anticipated population growth, infrastructure development, and "sustainability" and "resiliency".

and collaboratively to further evolve and create efficient and effective governance frameworks, institutions and practices that further mutual well-being.

We are supported in this work by our developing information technology and systems. This has allowed us to shift our focus from quasi-judicial permitting processes (involving full blown proposals and a myriad of individual agency "judgments") to multi-agency/interest planning processes in which information is coordinated and shared among the various agencies and interests involved in the scoping of alternatives, impacts and effects and the development of common plans.

We are also increasingly addressing such eco-system conservation and development concerns together and early. As a result, we can anticipate more up-front costs (e.g., early large-scale research, mapping, planning and habitat acquisition), and longer-term net-benefits. And, as we pioneer this approach, we can anticipate encountering narrowly focused silo-like agencies and private and public interests, often understaffed, with constrained budgets (that do not reflect a shift in the application of funds) and challenged with adjusting to this new way of working (with immature principles, protocols and procedures). This poses a significant institutional challenge.

How do our institutions evolve to provide for the shift way from stove-pipe regulatory processes toward more integrated planning models that efficiently reconcile not only eco-system and development concerns, but also address other concerns related to sustainability generally?

In addressing landscape-level eco-system conservation and development together…we can anticipate increased up-front costs…[and] encountering narrowly focused silo-like agencies and private and public interests, often understaffed, with narrowly constrained budgets and perspectives.

LOOKING BACK AND FORWARD

The San Bruno Mountain HCP was a collaborative effort to reconcile development and wildlife conservation (the "ecological community") and included local, State and federal agencies, as well as development and environmental interests. It provided the "model" for Section 10(a) of ESA, providing for permits for the incidental take of federally-listed threatened and endangered species (ITPs).[5] And, while most HCPs that followed have focused on individual applicants and single species, there has been a growing trend toward focusing more broadly to address area-wide concerns. In addressing the ecological community, it addressed more than 50 "Species of Concern". Some recent HCPs have focused on more than 140 species and areas that span multiple states and millions of acres. (See Figure 1.1 and Appendix B.)

Below: *San Bruno Mountain Ridge Trail.* The San Bruno Mountain HCP area covers the San Bruno Mountain south of San Francisco and within the cities of South San Francisco, Daly City, Colma, and Brisbane

Photo source: County of San Mateo, CA Parks Department

In addition to the historic focus of HCPs on wildlife concerns underlying the ESA and, recently, the MBTA (also within the jurisdiction of USFWS), with an appreciation that beyond these measures and with the exception of federal lands and waters, the regulation of wildlife conservation has been a State function that has been delegated, in large measure, to local agencies. Further, while HCPs have focused on federally-listed species, they have also provided the basis for State and local regulation (e.g., the California NCCP) with respect to wildlife and wildlife habitat and are beginning to be coordinated with federal permitting under the CWA (see Chapter 3). And, as they grow in scope, there are questions as to how they relate to other federal and state programs (e.g., FLPMA, USACE and USBR watershed plans and SAMPs and various State programs such as those focusing on wildlife, the environment, sustainability and infrastructure development).

Above: *Townsend's Big-Eared Bat*
A protected species in the California Desert Rewable Energy Conservation plan.

Photo source: the Bureau of Land Management / Desert Renewable Energy Conservation Plan

TERMINOLOGY: "HCP," "MSHCP," "AREA-WIDE HCP"

With the expanded application of the HCP concept, questions arise as to terminology and classification. Generally, the development of a HCP is comprised of three elements: (i) a geographically focused, habitat conservation plan collaboratively prepared by a group of affected local, State and federal agencies and, in some cases, interests; (ii) an implementation agreement; and, (iii) on-going conservation as contemplated by the conservation plan. This idea was a paradigm shift in that it envisioned that the plan and agreement would be developed collaboratively and coordinated with related CEQA/NEPA processes, providing the basis for separate agency permits and approvals. This replaced the multi-agency, in-seriatim permitting process, contemplating separate (often conflicting) agency-by-agency permit conditions and was intended to provide assurances equivalent to "development agreements" which had then been authorized under various state legislation.

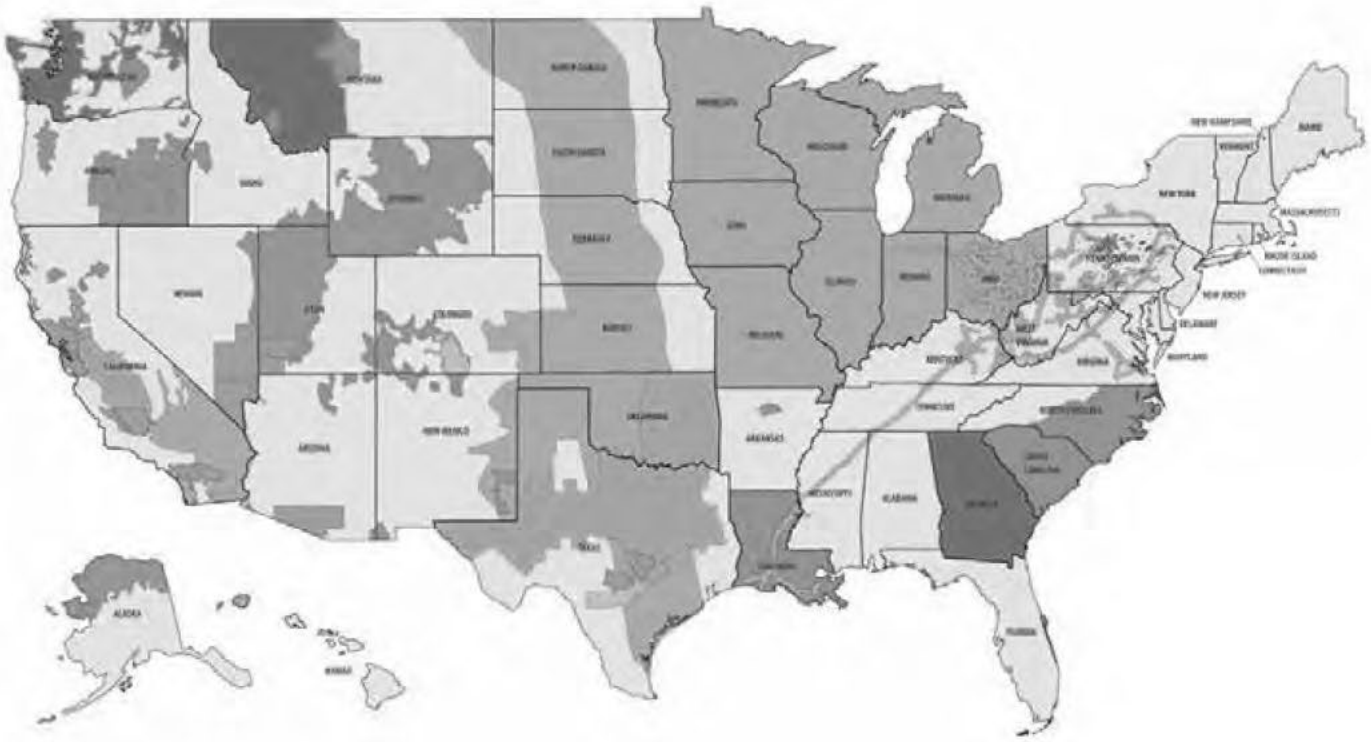
While the San Bruno Mountain HCP was the model and covered a number of "species of concern" within the plan area, many of the HCPs that followed focused on single species, a single project and a relatively small parcel of land - essentially a federal ITP with conditions. Further, implementing agreements are not an element of every HCP. For example, the current draft revisions to the HCP handbook provide that "Implementing Agreements are not required under Section 10 and are typically reserved for more complex, or multi-party plans. Some suggest that in many cases there is no need for an implementing agreement where all of the agreed-upon measures are spelled out in the HCP." Since the adoption of the San Bruno Mountain HCP, we have increasingly employed "Area-wide HCPs" or "MSHCPs" covering multiple species and developed collaboratively by local, State and federal agencies. These Area-wide HCPs and MSHCPs have focused on urbanizing areas, timberlands, rivers and pipelines, transportation corridors, fly-ways and other areas related to solar and wind energy projects. Further, the HCP concept has increasingly embraced habitat more broadly, beyond the conservation of species listed as "endangered" or "threatened".

Increasingly, the HCP approach has been employed at earlier times in anticipation of infrastructure and development, with the increasing involvement of multiple agencies and interests. There are now more than 1100 completed HCPs covering millions of acres and many other similar processes and institutions.

The roots of the HCP concept can be found in earlier major pioneering collaborative efforts, such as the inter-state Delaware River Basin and Chesapeake Bay efforts (see Figure 3.1), and, in turn, provided the seed for the South Florida Eco-system Restoration Project.[6] (See also Appendix C.)

It is clear as well that the concepts underlying the HCP have even broader application. The geographic boundaries and the implementation agreement can be flexible and fashioned to address a variety of concerns ranging from disaster relief following hurricanes and tsunamis to climate change, urban renewal and sustainability.

FIGURE 1.1: NATIONWIDE EXTENT OF HCPS



Legend

Habitat Conservation Plans (HCPs) greater than 100,000 acres*

- Timber Harvest HCP
- Gas and Electric Utility HCP
- Urban Development HCP
- Water Management HCP
- Renewable Energy HCP
- Rangeland Management HCP

Other Endangered Species Act Section 10 Conservation Plans

- Safe Harbor Agreement
- Candidate Conservation Agreement/ Candidate Conservation Agreement with Assurances

* HCPs may cover one species or multiple species. Overlapping plans are not shown for clarity. In-process plans also shown. Approved plans as of January 2016. Boundaries are approximate.

Prepared by David Zippin, ICF

FIGURE 1.2: CALIFORNIA REGIONAL CONSERVATION PLANS

NCCP: Natural Community Conservation Plan (California Fish and Game Code §2800)
HCP: Habitat Conservation Plan (Federal Endangered Species Act Section 10)

The focus of HCPs has been on regulatory compliance. The strong sense from our HCP Dialogue is that we now need to move beyond this limited focus and see HCPs as part of State and federal programmatic efforts to plan, fund and work proactively with local agencies and affected interests and to address habitat conservation in concert with infrastructure and other development.[7] In this spirit, the question is: how are these efforts funded and financed? How do HCPs relate to other local, State and federal programs, particularly those focused on sustainability and the provision of water, energy, infrastructure and development more generally? And, appreciating the growing complexity and inter-relatedness of these programs, how do we promote collaboration and innovation?

"Effective HCPs rely on high-quality conservation, science and rapidly evolving mapping technologies. Advances in both have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent."
—James R. Strittholdt, *President*, Conservation Biology Institute

Above: *A Variety of Desert Parsely growing in a lek.*
The Sagebrush steppe attract greater sage grouse for elaborate mating rituals. These areas, called leks, are protected by the Sage-Grouse HCP
Photo source: the Bureau of Land Management Oregon and Washington

INCREASING FOCUS ON LANDSCAPE-LEVEL CONSERVATION

As a young nation, our focus was on quickly dividing and moving the control and management of lands into the private sector to promote development.[8] With a rapidly growing population, challenged by sustainability, our increasing focus is on a balanced human/nature interface. This is best accomplished at the landscape-level and before the lands have been fragmented (by use, ownership or jurisdiction).[9] Such early action conserves landscape-level eco-systems, reduces acquisition costs (before land values escalate as development nears), and avoids increased conflict as the fire-line of development moves across the landscape.

In fact, for more than 30 years, the HCP approach has been used at increasingly earlier points to address broader eco-systems (in terms of both the numbers of species and the expanse of lands and eco-systems covered). This has also resulted in the increasing involvement of a spectrum of agencies and interests (e.g., at the federal level: BLM, USBR, USFWS, and NPS; USDA; USACE; USDOT FHWA; and EPA).

Nationwide, there are now more than 1100 HCPs completed or in process, covering millions of acres many of which are landscape-level (see Figure 1.1 and Appendix B). These plans relate to transportation infrastructure, pipelines, energy projects and other infrastructure; forests; rivers (e.g. the Colorado and Santa Ana Rivers, the California Bay-Delta). However, in many cases, the formal HCP aspect of this process has been abandoned in favor of consultations under Section 7 of the ESA; agriculture; urbanization; and oil and gas development. For example, these HCPs, or similar efforts, include the following:

- HCP-like Sage-Grouse Action Plans were adopted by BLM and the USFS within eleven Western States to conserve the Greater Sage-Grouse (see Figure 3.6). As a result, the Secretary of Interior has determined that the listing of the species as "endangered" was not warranted.[10]
- The South Florida Eco-system Restoration Project, mentioned above, focuses on the recovery of the Everglades and the restoration and management of its surface water regime, covering approximately four million acres. (See Appendix C.)
- The fourteen state NiSource HCP addresses the impacts of a 15,562 mile natural gas pipeline. (See Appendix B.)
- Two multi-state wind energy HCPs: the Great Plains HCP, covering 268 million acres from North Dakota to Texas, and another covering the eight states adjacent to the Great Lakes. (See Appendix B.)

- The proposed California Desert Renewable Energy Conservation Plan, a HCP, NCCP and DRECP covers 22.5 million acres, which has recently been restructured to focus first on the development of a BLM Land Use Plan Amendment under FLPMA, covering 16 to 18 million acres (with anticipated renewable energy projects comprising 177 thousand acres), based on an innovative "Gateway" mapping and information system. (See Figure 1.2 and Appendix D.)

- There are multiple timber HCPs in the Pacific Northwest, stretching across five states. These are largely either self-funded (by the timber/infrastructure operators) or funded on an ad-hoc basis from various local, State and federal sources and from project fees and overseen at a high level by State and federal agencies. (See Appendix B.)

- The Lower Colorado River Multi-Species Conservation Plan with an area of 717,000 acres that extends over 400 miles of the River to the border with Mexico. (See Appendix B.)

- County-scale HCPs focused on urban and infrastructure development in several states, including California, Colorado, Florida, Texas, Utah, and Washington. The HCPs in preparation or being implemented in California will conserve over 2 million acres of wildlife habitat (mainly in large preserves with protected landscape linkages to maintain connectivity) and will provide streamlined permitting for over $1.6 trillion dollars of economic activity. In several cases, California voters approved, with two-thirds super majorities, the use of local sales tax revenues to finance landscape-level HCPs to mitigate the impacts on endangered species of major expansions of transportation infrastructure. For example, the San Diego Association of Governments (the Metropolitan Planning Organization (MPO)) is raising $850 million in San Diego County sales tax revenues through "TRANSNET", a program to mitigate impacts on wildlife habitat. Similarly, the Orange County Transportation Authority has used Orange County sales tax revenues to acquire more than 1300 acres of conservation lands to mitigate impacts of expanded transportation infrastructure.

- The South Florida Eco-system Restoration Project (see Chapter 3-Case Study 3 and Appendix C), and the Delaware River Basin and Chesapeake Bay programs (see Chapter 3-Case Study 1) are also examples of unique efforts with high-level state and federal participation and funding which have innovatively struggled with approaches to achieve collaborative innovation in addressing habitat and water quality concerns with respect to the broad eco-systems involved.

HCPs have proven effective in both conserving habitat and making development more efficient and less costly. As compared with project-by-project mitigation, early landscape-level advance mitigation and conservation is far more efficient, effective and critically important.[11] And while successful examples of pioneering efforts have been identified and explored, significant questions still remain regarding the implementation of this concept more broadly, for example:

- How are landscape-level mitigation/conservation plans to be funded and then re-paid from infrastructure or other development?

- How can HCP processes be efficiently coordinated with other permitting processes?

HCPs have proven effective in conserving habitat and making development more efficient and less costly. However, questions remain: funding and financing programs and arrangements; coordinated multiple agency permitting; effective monitoring and enforcement; and consideration of other broad concerns regarding, e.g., "sustainability" and "resiliency".

- How can the resulting conserved habitat be best managed, and the related plans and implementation agreements monitored and enforced?
- How can the effects of climate change on wildlife conservation and adopted HCPs be addressed (with an appreciation that a change in climate will result in major changes in both habitat and the form of the HCPs and other programs)?

These questions remain unanswered following the four HCP Dialogue sessions - left to be explored and translated into principles and practices. However, several proposed axioms emerged for further consideration:

- Habitat conservation is most effectively and efficiently addressed, in advance, at the landscape level in anticipation of infrastructure and development.
- HCPs should be viewed more broadly, beyond the regulatory perspective of the ESA, as part of broader "programmatic" efforts (common planning efforts, funding, coordinated implementation) among pertinent federal, state and local agencies and private interests.
- Early surveys, research and programs, at the State and regional level, are important in order to understand and reconcile habitat conservation with economic development in making the HCPs more effective and efficient.
- Early State and federal programmatic funding makes sense, in support of early advanced wildlife habitat acquisition for conservation and mitigation, and may be essential.
- More effective and efficient standardized guidelines, processes, tools, protocols and principles (e.g., relating to inter-agency collaboration, mitigation credit pools) would be helpful.
- The conceptual principles underpinning the HCP concept: collaboratively developed geographic-based plan, implementation agreement (providing for mitigation, management, monitoring, etc.), are applicable to other complex situations that involve a number of affected agencies and interests.

Above (top): *Mohave Ground Squirrel*
Above (bottom): *Burrowing Owl*
The California DRECP identifies areas where habitat conservation and management actions should occur to conserve, enhance, restore, and protect covered species, including the Burrowing Owl and Mohave Ground Squirrel.
Photos by Bud Widdowson (Top) / Phil Leitner (bottom)
Photo source: Desert Renewable Energy Conservation Plan (both)

These principles and related ideas regarding standards, practices and processes are discussed below, as well as thoughts regarding furthering the HCP Dialogue.

CURRENT ISSUES ABOUT THE FORM AND FUNCTION OF HCPS

The foregoing is not intended to suggest that there are not current issues regarding the form and function of HCPs. There are, however, they do not detract from proposals for an early, programmatic, landscape-level approach to conservation in reconciliation with infrastructure and development generally. For example:

- How should we address changed circumstances related to climate change?
- Signatory agencies to ac HCP IAc have specific authority. However, HCPs may address matters that transcend such authority (e.g., addressing a landscape-level eco-system or eco-systems, when, arguably, the specific agency's authority is limited to a specific species). Are we providing by agreement for an expansion of the authority of individual agencies?

- The past warring between the development and environmental communities reflects and promotes distrust and, in turn, an increased focus on the documents evidencing the various HCPs, as well as their enforcement. Environmental interests attack approvals based on the inadequacy of analyses and documentation. In response, the development community and the regulatory agencies, in the middle, respond with even more detailed processes and more voluminous and detailed documentation and demands (sometimes using the burden of the process as a lever in the "negotiations"). The result is often protracted processes and voluminous documents that are inscrutable, promoting reliance on agency interpretation and arguments over their interpretation. There is no clear answer to these concerns, other than to suggest that with experience and with better leadership, as we embrace and implement the idea of "collaboration" in the preparation of HCPs, the process will move from being a negotiation in which each party attempts to maximize the satisfaction of its demands to one in which there is an increased sense of trust, common fairness and reasonableness among those framing the documents. In turn, the expectation is greater simplicity and clarity in the form of the documentation and the processes employed to craft them.

Current issues:

» **Programmatic funding/financing; Differentiating the roles and authority of the various agencies involved in a particular HCP;**

» **Addressing the effects of climate change;**

» **Moving from "conflict resolution" to "collaboration".**

INCREASING ROLE OF SCIENCE, MAPPING AND INFORMATION TECHNOLOGY

An increasingly important foundational element of such broad collaborations is trusted scientific information and protocols that are available and can be relied upon with confidence by those involved. There is a need to further explore how science and science-based tools (models, decision support tools, mitigation calculators, etc.) can help increase efficiency, effectiveness, and legitimacy of these processes. It is suggested, for example, that a web-based data platform, easily accessible and transparent, should be established at the outset of a planning process, and maintained throughout the planning and implementation phases (i.e., transitioning from a platform to assemble available data, to decision-support tools for plan development, to an adaptive management and monitoring platform where data are stored, maps updated, etc.). The intent would be to make the data readily accessible by the affected agencies and interests involved (including non-technical participants) and the public. (See the Data Basin and Gateway approach described in Appendix D.)

It has also been suggested that there should be independent scientific input throughout all phases of planning and implementation, with the observation that DOI and other public agencies acknowledge they are understaffed and unable to keep up with conservation science, and that plans are often ineffective and inefficient (and non-transparent) as a result. The point suggested that conservation science, remote-sensed data, data base platforms, models to fill information gaps, decision-support tools, etc., are evolving rapidly and can be used to increase objectivity, transparency, efficiency, effectiveness, and defensibility of HCPs. At the same time, some have suggested that some of those involved (permit applicants" and some agencies) may not be in favor of "too much science meddling", fearing costs, delays, etc., but that scientists can actually help reduce costs by recommending cost-effective ways of filling information gaps, monitoring species, etc.[12]

Chapter Two: Programmatic Conservation in Coordination with Infrastructure and Development

IN GENERAL

Landscape-level conservation is a critical focus in effectively and efficiently conserving wildlife habitat in concert with infrastructure and development. It is also becoming apparent that this needs to occur in a programmatic manner - coordinated with affected local, State and federal agencies and interests, and, increasingly related as well to other concerns such as "sustainability".

Agencies are often concerned primarily with the provision of infrastructure; which consists of the basic facilities relating to energy, transportation, water supply, waste, storm water and communications. While development of such facilities, and the development that follows, can adversely impact wildlife habitat and ecosystems, most public agencies have advanced to the point that they embrace the need to minimize and mitigate such harm. This concern and the growth of knowledge, techniques, and tools for addressing ecological impacts of infrastructure, is exemplified by the collaborative Eco-Logical Program of USFWS and USDOT ("Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects"). This approach "encourages Federal, State, tribal and local partners involved in infrastructure planning, design, review, and construction to utilize flexibility in regulatory processes. Specifically, Eco-Logical lays the conceptual groundwork for integrating plans across agency boundaries, and endorses ecosystem-based mitigation - an innovative process for mitigating infrastructure impacts that cannot be avoided".[13]

Landscape level conservation should occur in a programmatic manner, coordinated with affected local, State and federal agencies and interests, AND addressed in the context of "sustainability" and "resiliency".

It was the sense of the HCP Dialogue, this appears to be the right direction and needs to be met with a broader multi-agency/interest framework of support, participation, tools

Below: *Kissimmee River in South Florida*
Image of South Florida HCP landscape

Photo source: South Florida Water Management District

and practices. The following is a beginning list of thoughts regarding the principles and tools that would be helpful for a programmatic approach to accomplish the various objectives discussed in this Report which are becoming increasingly common.

LANDSCAPES AND ECOSYSTEMS

As the number of HCPs increase, it would be helpful to have a better understanding of the nature and value of the ecosystems involved, and potential future conflicts or, complexity with respect to their conservation. This could be provided on a State-by-State basis, perhaps pursuant to cooperative federal-State efforts, including, efforts related to various current federal, State and non-governmental organizations (NGO) programs, such as the Eco-logical Program mentioned above, State Wildlife Action Plans or the DOI-led program of Landscape Conservation Cooperatives (LCCs).[14] The specific studies and information could be focused at a State-wide level, which could then focus down on regions and more specific areas within a State. The result could be similar to, for example, the designation of "Areas of Critical State Concern".[15] In some cases, such as the Greater Sage-Grouse, the eco-system may transcend State boundaries. However, while a single plan transcending State boundaries may be appropriate, political and institutional considerations often necessitate individual State plans or arrangements. The approach and design of such plans calls for further thought on the part of the States as well as the federal agencies, perhaps collaboratively. As suggested below, our evolving information systems make the development and implementation of such plans more feasible, whether State-by-State or inter-State in scope.

Early biological research is required: surveys, mapping, identification of potential gaps in the conservation systems, etc., in order to prioritize which landscapes should be conserved, followed by the development of plans and strategies for their conservation (e.g., the acquisition or setting aside of public lands, or the development of conservation/development approaches). This early work may also gauge the threats to wildlife conservation from, for example, urbanization, transportation and energy infrastructure, oil, gas and mineral development, farming and ranching, etc. or climate change. It may also address opportunities, such as those presented by large-scale

Below: *Sage Grouse Habitat*
Sage Brush Landscape

Photo source: the Bureau of Land Management Oregan and Washington.

ranches that are intact and, with the support of the ranchers, available for conservation. To the extent that there are potential conflicts between habitat conservation and other uses, there may be a need for a HCP or a HCP-like planning approach and regional or State coordination.

This work is increasingly supported using sophisticated computer modeling efforts (e.g., eco-system and habitat distribution models, species population models, landscape intactness, ecological integrity, and conservation value models, climate change effects analyses, resiliency and refugia analyses, and mitigation calculators) that are developed and updated in an increasingly collaborative, available and transparent manner.[16]

PROGRAMMATIC WILDLIFE CONSERVATION IN RELATION TO DEVELOPMENT

At various times in the past, States and the federal government have undertaken broad, system-wide efforts to address their lands and waters broadly.[17] Currently, there is a similar feeling abroad, not so much with a view that it is time for a great change in direction, such as experienced in the early 1970's with the environmental revolution, but rather that there now may be more of a common desire to cooperate in reconciling the development/ environment relationship.[18] With this in mind, the following discusses the role of the HCP as part of a broader programmatic approach with a focus on our built environment together with our natural environment.

With our growth in population, anticipated climate change, and the dramatic effects of innovation in information technology, we are experiencing major change in our systems and concerns regarding transportation, water, energy and sustainability (including the conservation of eco-systems). It is critical that we appreciate and embrace this change, and must view the re-ordering involved from the "mother-board" up with wildlife/eco-system conservation being considered together with infrastructure and development earlier and more broadly. They are intertwined in our nation's future and should be addressed programmatically in that manner. HCPs can be seen as the early beginnings of an effort to coordinate and programmatically relate the two more broadly.

At the federal level, an increased focus on a programmatic approach could build on the current HCP and other programs (e.g., State Wildlife Plans, LCCs and, in a more detailed manner, the Eco-Logical program) in bringing together federal agencies and others. It could embrace the concept of collaboration and focus on the coordination of development and conservation - with the HCP as one tool in the tool box. Such an increased focus could be explored more broadly under the auspices of CEQ, DOI and/ or others.[19] Initially, it could include bringing together DOI (including USFWS, BLM, USGS), USACE, EPA, USDOT and USDA, in coordination with, e.g., the DOI LCCs and Eco-Logical transportation-related programs)[20] As modeled by the Sustainable Communities Partnership among EPA, USDOT and the Department of Housing and Urban Development (HUD) as partners, it would be valuable to explore how to include in the development and implementation of those efforts, State and local agencies and private interests. Efforts regarding the conservation of the Greater Sage-Grouse and the California Desert Renewable Energy Program point very much in that direction.

COLLABORATIVE (MULTI-AGENCY/INTEREST) INNOVATION

There are significant changes in our culture and governance structures as a result of the information revolution. With these changes, information is increasingly available and easier to store, manage and share.[21] As a result, we are seeing organizations and institutions operating more horizontally (with greater and quicker direct coordination within, and between, layers in the hierarchies and between hierarchies). Further, we are also working more virtually rather than face-to-face. The shift is toward greater "collaboration" but with less face-to-face interaction.

The HCP is an early model of this shift in our way of working. It stressed multi-agency/interest collaboration in the development of a geographical-based plan, with an agreement for its implementation. What are the processes, practices and protocols called for in the further evolution of this model.[22]

Below: *Conducting Multi-Agency Collaboration*

This image is intended to capture the spirit of the collaborative process, with the "conductor" (perhaps a small group of leaders), assisting the agencies and interests involved to "stitch" together and "craft" a quilt, articulating a way forward – based on science, respect, and, ideally, empathy and exuberance.

Drawings by L. Marsh

Above: *Landscape view of California Bay Delta*
Photo source: Bay Delta Conservation Plan

Key elements of collaborative planning processes:

- **Collaboration:** "Collaboration" is not the same as "conflict resolution" and it is more than "cooperation." Collaboration utilizes a planning, rather than a conflict-resolution model, and can be characterized as agencies (and interests) working and planning together, with respect, consideration and support for the different objectives of each. "Planning" involves the resolution of conflicts; however, in collaborating, participants come to the table with a different sense or set of principles underlying the relationship to others. "Conflict-resolution" brings up images of warring parties, each tending to view the outcome as winning or losing and with each party focused on "more" for itself from the outcome. "Planning", on the other hand, suggests a more amicable, respectful, empathetic relationship among those involved understanding that their differing views will merge through "dialogue" into a single out-come or plan, although with respect for their distinct principles. Finally, the "Implementation Agreement" provides assurances that the plan will be honored moving forward. One way of looking at the collaborative process is that the result (a plan) is the goal and those involved in the planning process need to work together to develop the best plan going forward.

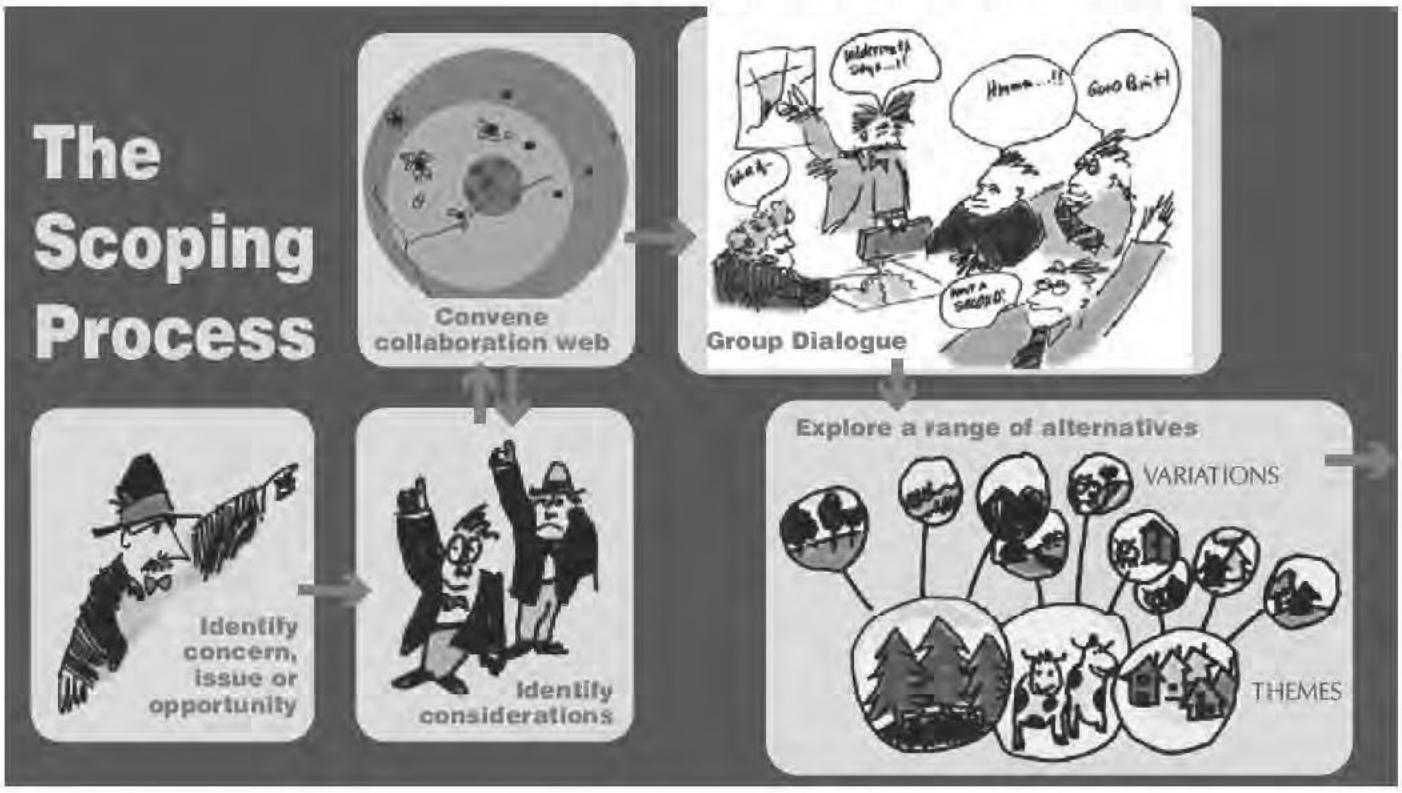
- "**Constituency of Affected Agencies and Interests**"**:** Who is involved? Each planning process has a constituency of affected agencies and interests. It is important to provide for their involvement (at the table or by soliciting and sharing their input and/or votes). Some use the term "stakeholders;" however, often this characterization is seen as excluding various public agencies. So how do we plan for and convene or involve groups in a way that promotes dialogue and gets away from the underlying sense of "winning" and "losing"? Both the Bay-Delta Conservation Plan and the DRECP have struggled with the appropriate inclusionary process, involving a significant number and diversity of agencies and interests, focusing on broad geographic areas.[23] It would be valuable to further consider how these, and other, similar processes were structured, in crafting future efforts.

- **Dialogue:** "Dialogue" is based on principles of respectfulness (in this case, of the differences among the agencies, interests and individuals involved), truthfulness, good will, and civility - while respecting both one's organizational mandates and working to understand and accommodate with empathy the mandates of the other agencies and interests involved.

Innovation pilots and models are a powerful and effective way of working (especially if blessed at a high level by the agencies and interests involved).

This concept of respectfulness of diversity is one of the key principles of our culture. At base, there is an understood principle that people may have diverse views, beliefs, truths and objectives (for example, the importance of a particular use of land or resources), but find a way to join together through "dialogue" in planning and moving forward in the face of such diversity. This respectfulness in the face of diversity is often reflected in a sense of empath and "trust" (notwithstanding a difference of views) that provides the critical element in successful collaborations. [24]

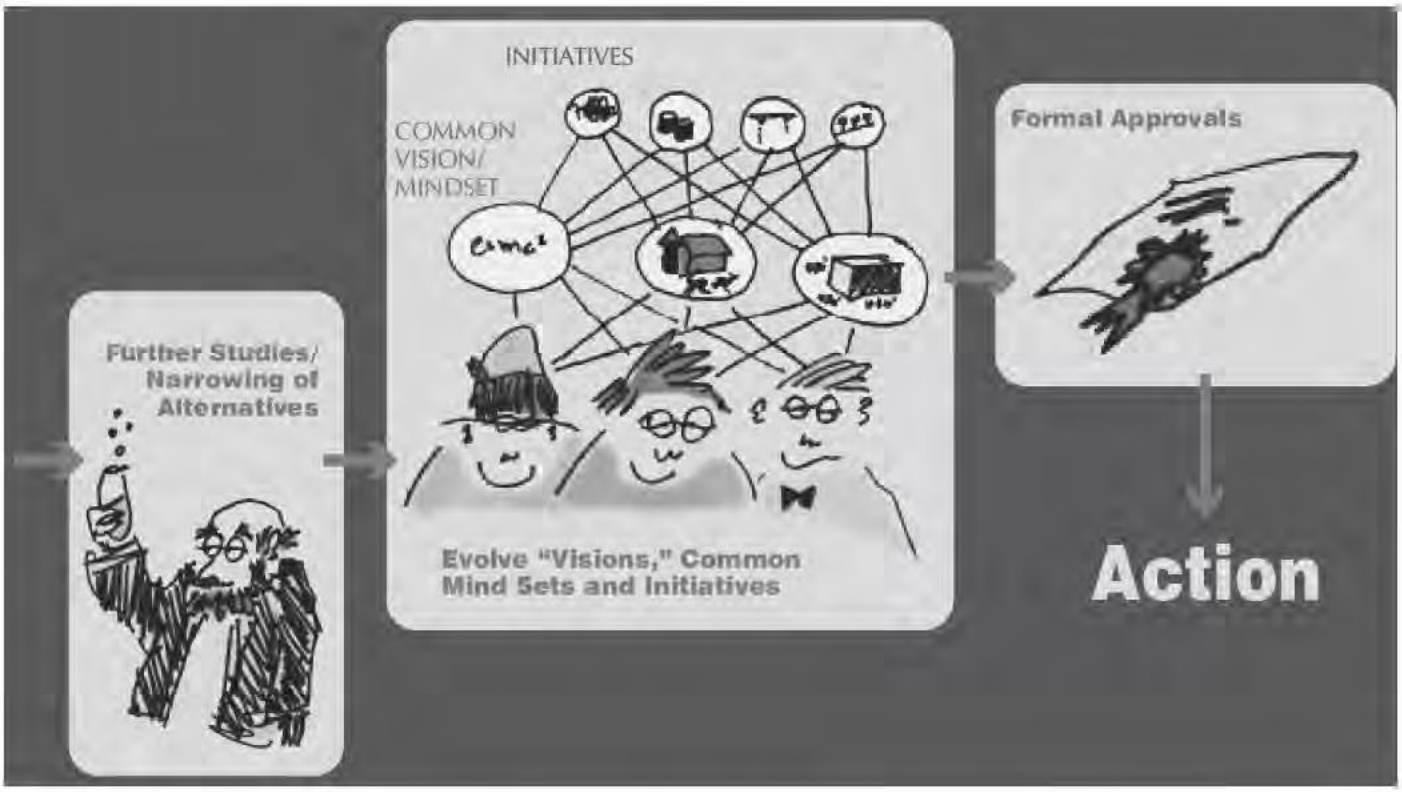
- **Scoping**: "Scoping" is a process that includes the identification and exploration of considerations and concerns of the constituency involved, available information, opportunities, and alternatives (and both their benefits and adverse effects). In turn, it involves a number of practices and principles. For example, it can be difficult to be open and reasonably consider a variety of alternatives that are not one's own.



- **Leadership**: The increased flow of information within and across boundaries[25] does not mean that vertical hierarchies are not important. They are. "Leadership" plays a very important, critical role in the effectiveness of HCP processes. Without adequate leadership, processes can be characterized by hostility and fierce disagreements (and even litigation). And, it is not sufficient for those in leadership to simply direct their different agencies and interests to "work together". Often the result is a leaderless, listless, group of lower staff members dogmatically clinging to outdated or rigid mandates of their particular agencies, with little empathy or respect for the concerns of other agencies and interests. In contrast, the leadership that is required is ongoing oversight and support in bringing to bear the principles of collaboration and dialogue in the processes of

"dialogue" and the "scoping" of concerns, issues and alternatives.[26] This quality of "leadership" is often observed in the active involvement and support from upper management levels to assist their teams or staffs to understand agency interests and mandates. Less apparent is the empathy and "flexibility" to find innovative ways to reconcile various concerns and move forward. The elements of such practices deserve further exploration and understanding, perhaps in relation to the design of a more inter-agency programmatic approach.[27]

In summary, these multi-agency agreements often reflect complex arrangements crafted utilizing these evolving practices of "dialogue" and "leadership."



Drawings by L. Marsh

Designation of Innovation Models and Pilots

As suggested, this is a time of experimentation regarding the Future of Habitat Conservation Planning and for the application of the HCP concept more generally. While the San Bruno Mountain HCP has been embraced at the highest levels, further innovation is called for. For example, several Northern California counties have pioneered approaches to integrate ESA and CWA Section 404 requirements and South Florida is exploring collaboration among federal, State and local agencies regarding the restoration of the Everglades. It would be helpful to identify and encourage innovative "pilot" efforts at the national, State and local levels that transcend institutional boundaries and particular concerns (e.g., ecosystems, wildlife, wetlands and streams, transportation, coastal areas, various elements sustainability, such as climate change) in the context of infrastructure and development of various kinds.[28]

Chapter Three: Specific Concerns, Principles, Processes and Programs

HCPs AND SIMILAR EFFORTS IN CONTEXT

In General

HCPs are "focused" or "focal point" plans and are not comprehensive. They are focused on wildlife habitat conservation, generally in concert with anticipated human developments and activities.[29] Generally, they have focused on a limited number of "Species of Concern" within a "Focused Area" and provide for "Conservation Areas" (generally comprised of "Core Areas" and "Linkages") and/or "Protocols" related to certain activities (e.g., wind farms within a flyway).

Some suggest that HCPs simply provide the basis for ITPs (focused on providing "take" permits for individual listed species) under the ESA. Others respond that these plans are much broader in effect and provide for the conservation of habitat for "suites of species," "ecological communities" and "eco-systems," covering, in some cases, more than a hundred species. Accordingly, from the CEQ Conversation, it became increasingly apparent that we need to understand the workings of the HCP concept in the broader context of local, State and federal programs and practices.[30]

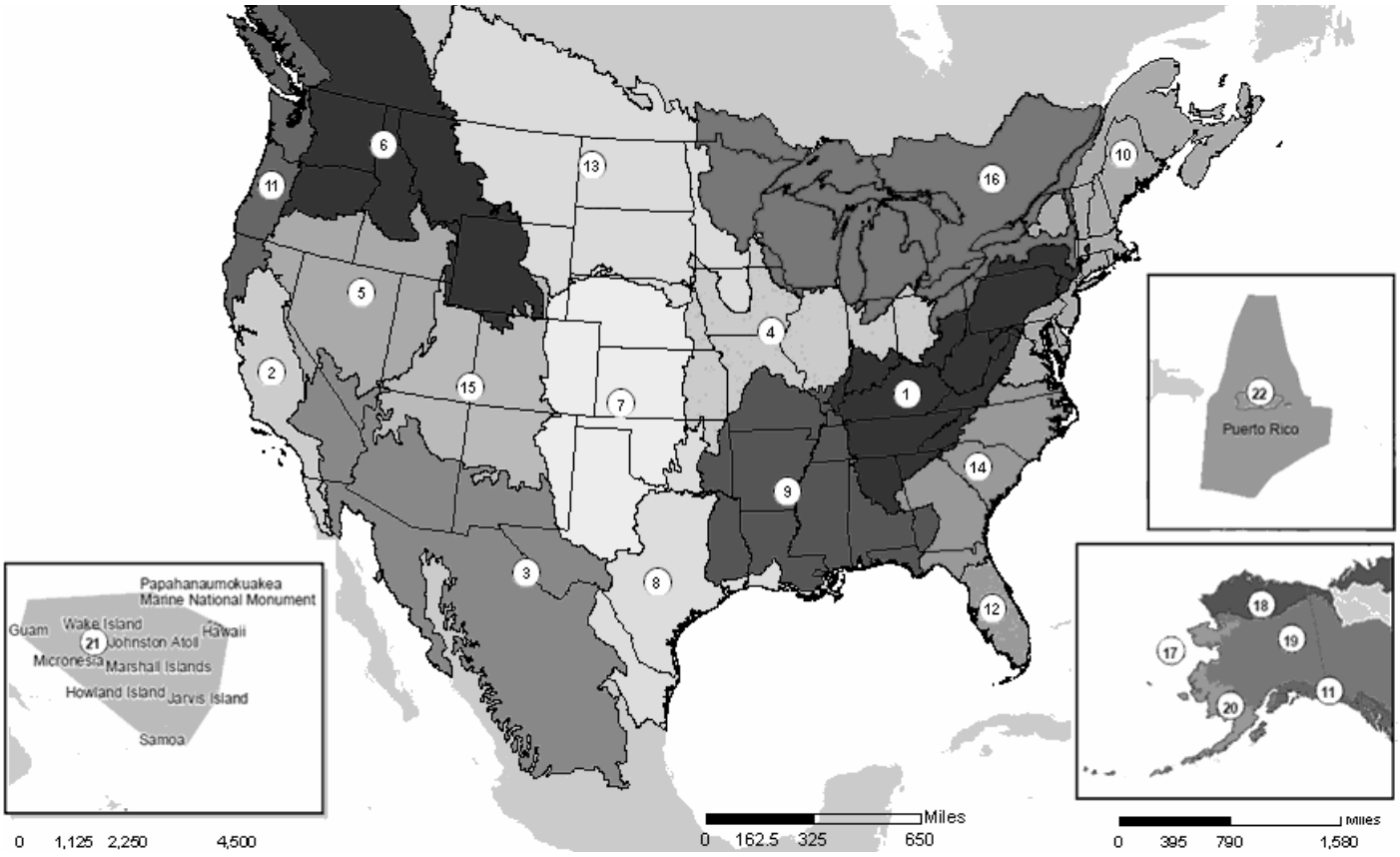
State and Federal Context

As suggested above, HCPs are not State Wildlife Action Plans, nor are they local General Plans. Only recently have they been the basis for CWA permits. Further, to the extent that they focus on permitting, they are not part of State infrastructure planning,

Below: *American Alligator*
The South Florida CERP protect habitats for a range of species.

Photo source: South Florida Water Management District

FIGURE 3.1: DOI - LED CONSERVATION COOPERATIVES



1. Appalachian
2. California
3. Desert
4. Eastern Tallgrass Prairie and Big Rivers
5. Great Basin
6. Great Northern
7. Great Plains
8. Gulf Coast Prairie
9. Gulf Coastal Plains and Ozarks
10. North Atlantic
11. North Pacific
12. Peninsular Florida
13. Plains and Prairie Potholes
14. South Atlantic
15. Southern Rockies
16. Upper Midwest and Great Lakes
17. Aleutian and Bering Sea Islands
18. Arctic
19. Northwest Boreal
20. Western Alaska
21. Pacific Islands
22. Caribbean
Unclassified

Albers Equal Area Conic NAD83
Produced by FWS, IRTM, Denver, CO
Map Date: 12142011

nor have they enjoyed broad programmatic state or federal funding. Yet, they are increasingly viewed as the major federal and, often, State tool for the conservation of wildlife habitat listed as "threatened" or "endangered" or "of concern" (e.g., in urbanizing areas). HCPs are not the only tool for every circumstance. Rather, the sense from the HCP Dialogue, and particularly the CEQ Conversation, is that there is need for additional thought as to the appropriate role of an HCP in the context of state and local planning and regulations.

In discussing (in the CEQ Conversation), the work on the revised HCP Handbook (due out for comment later this year), it appeared that it would likely focus on the regulatory function of HCPs and USFWS under the ESA. In response, the suggestion was made that HCPs could be viewed programmatically as having not only a regulatory role, but also broader programmatic functions (research, funding, acquisition, etc.) related to wildlife conservation and even the environment generally and, perhaps, other concerns of the federal and State agencies (e.g., under CWA, ESA, NEPA, FLPMA, the National Historic Preservation Act, the National Transportation Act, and the National Water Resources Development Act).

In this regard, there are a number of programs and efforts at the federal and state levels that address the conservation of wildlife and deserve further consideration. For example:

- At the national level, there are 22 regional Landscape Conservation Cooperatives (see Figure 3.1), which are self-directed partnerships, under the leadership of DOI, among federal agencies, states, tribes, non-governmental organizations, universities, and other entities to collaboratively define science needs and jointly address broad-scale conservation issues, such as climate change in a defined geographic area;
- USACE and USBR are authorized to develop Watershed Plans;
- CZMA provides for the development of Special Area Management Plands (SAMPs) and the USACE utilizes SAMPs for CWA Section 404 permitting;
- FLPMA directs BLM to develop Land Use Plans for federal lands which it manages and expressly includes conservation as an objective;
- States and territories are required to prepare State Wildlife Action Plans ("SWAPs"). These plans outline steps to conserve wildlife and habitat before they become too rare or costly to restore. Taken as a whole, they are intended to present a national action agenda for preventing wildlife from becoming endangered;
- In California, local agencies and others may adopt Natural Community Conservation Plans ("NCCPs") with the intent that such plans will provide the basis for State permits for State-listed species and avoid the need for any further State and federal listing of species as threatened or endangered;[32,33]
- The California State Strategic Growth Council is working to explore the establishment of a program to develop regional frameworks, plans or guidelines for the conservation of eco-systems and wildlife habitat in the context of infrastructure and other development within the various regions of the State;

- Planning and regulatory commissions have been established with respect to the California Coast (the California Coastal Commission), San Francisco Bay (the San Francisco Bay Conservation and Development Commission) and Lake Tahoe (the Lake Tahoe Regional Planning Agency) to, among other things, conserve natural resources;
- In Florida, the South Florida Comprehensive Everglades Restoration Program (CERP), and other efforts provide a framework for conservation and development in a large portion of South Florida; and,
- The Chesapeake Bay Program and related agreements and institutions have provided for collaboration in the restoration and conservation of the Bay.

Programmatic Approaches – Further Research

In thinking about a "programmatic" approach for addressing wildlife conservation in concert with anticipated infrastructure and development, not only should the HCP model be considered and furthered, but it and its underlying elements (collaboration and the use of geographic-based plans and implementation agreements) may suggest or provide a foundation for other innovative approaches to the broader challenge of providing advance mitigation and conservation of ecosystems in concert with development and sustainability.

In this regard, there are five efforts that deserve significant further study in thinking about how major, large-scale, HCP-like efforts involving multiple agencies and public and private lands and interests might be organized:

- Chesapeake Bay Program and related efforts;
- California Bay-Delta Conservation Plan ("BDCP"),
- Florida Comprehensive Everglades Restoration Plan ("CERP");
- California Desert Renewable Energy Conservation Plan ("DRECP"); and,
- Efforts to develop State plans to conserve the Greater Sage Grouse and thereby avoid its listing as threatened or endangered under the ESA.

In Summary

These five efforts provide a rich trove of lessons, problems, and solutions. They all constitute, however, progress and provide key elements and learning for the crafting of future habitat conservation planning efforts. The major insight was that they all involved programmatic elements (e.g., science, mapping, management/implementation plans, funding, etc.) with participation by the various constituencies of agencies and interests.

Case Studies:

Above: *One of many species protected in the Patuxent River Park in Upper Marlboro, Md. by the Chesapeake Bay program.*
Photo by Anne Arundel
Photo source: Chesapeake Bay Program.

FIVE NATIONAL EFFORTS THAT DESERVE FURTHER STUDY

CASE STUDY 1 | Chesapeake Bay Program

CASE STUDY 2 | California Bay-Delta Conservation Plan ("BDCP")

CASE STUDY 3 | Florida Comprehensive Everglades Restoration Plan

CASE STUDY 4 | California Desert Renewable Energy Conservation Plan ("DRECP")

CASE STUDY 5 | Greater Sage-Grouse Plans

CASE STUDY 1

CHESAPEAKE BAY PROGRAM

Above: *Wetlands*
Image North of the Nanticoke Wildlife Management Area in Wicomico County, Maryland.
Photo by Matt Rath
Photo source: Chesapeake Bay Program.

The Chesapeake Bay is the largest of more than 100 estuaries in the United States. The Chesapeake Bay watershed includes parts of six states; Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia and the entire District of Columbia. There are nearly 1,800 local governments in the Bay watershed, including towns, cities, counties and townships.

The Chesapeake Bay was the first estuary in the nation to be targeted for restoration as an integrated watershed and ecosystem. The Chesapeake region is home to at least 29 species of waterfowl. Nearly one million waterfowl winter on the Bay approximately one-third of the Atlantic coast's migratory population. The birds stop to feed and rest on the Bay during their annual migration along the Atlantic Flyway. Forests cover 58 percent of the Chesapeake Bay watershed. The region loses about 100 acres of forest each day to development.

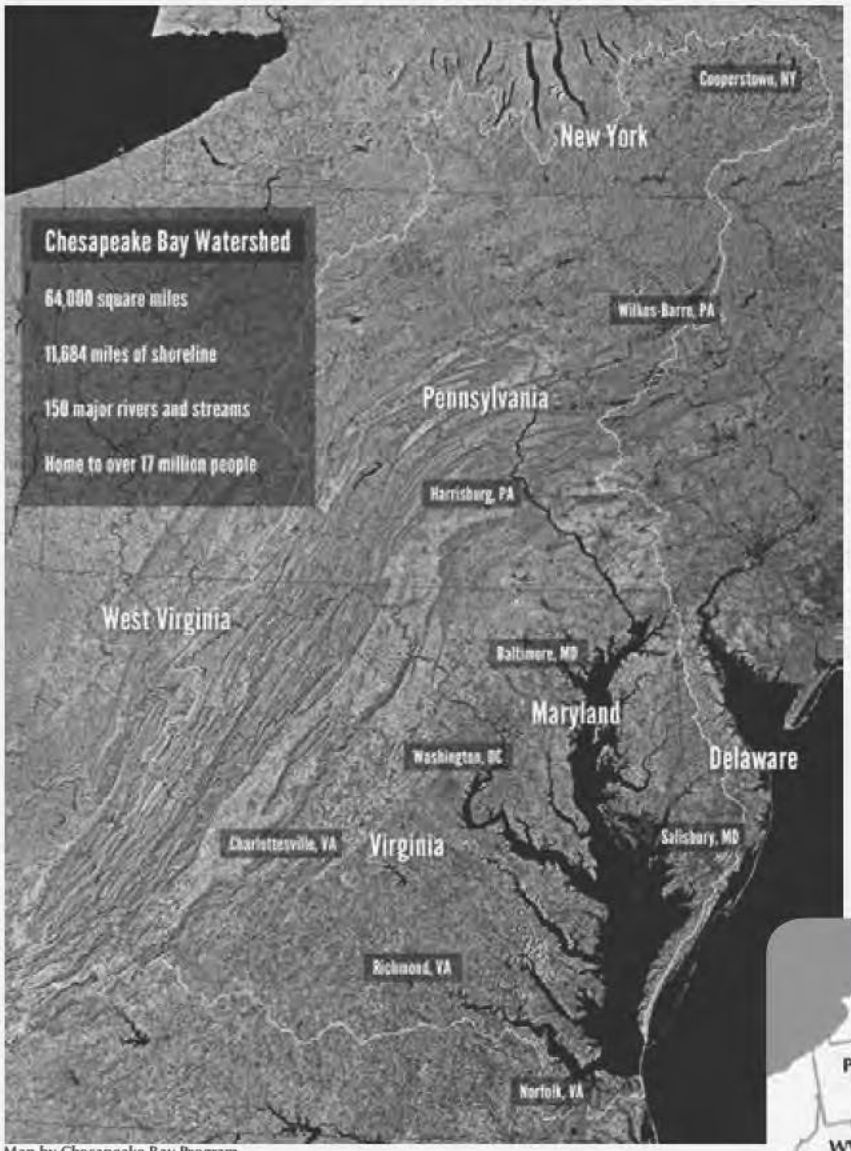
Since the formation the Chesapeake Bay Foundation in 1983, its partners have used written agreements to guide the restoration of the nation's largest estuary and its watershed. Setting goals and tracking progress holds partners accountable for their work, while developing new agreements over time ensures our goals are aligned with the best available science to attain restoration success. In 2009, it became clear that a new agreement was needed that would accelerate the pace of restoration and align federal directives with state and local goals to create a healthy Bay. Bay Program partners gathered input from citizens, stakeholders, academic institutions, local governments and more to draft an inclusive, goal-oriented document that would address current and emerging environmental concerns.

- On June 16, 2014, the Chesapeake Bay Watershed Agreement was signed. Signatories include representatives from the entire watershed, committing for the first time the Bay's headwater states to full partnership in the Bay Program. This plan provides for collaboration across the Bay's political boundaries and establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them.

- In a letter, partners promised to openly and publicly engage watershed citizens in implementing these goals and outcomes. Partners also identified the management strategies in which they planned to participate.[34] There has also been participation by a myriad of other organizations and interests (e.g., the Chesapeake Bay Conservancy, a non-profit organization, was formed in support of the broader efforts of the Chesapeake Bay Program).

This raises questions regarding the role of inter-state compacts, multiple agency collaboration, decisional voting arrangements and the use of a variety of different forms of organization to reach conservation objectives.

FIGURE 3.2: CHESAPEAKE BAY PROGRAM AREA



Map by Chesapeake Bay Program

CASE STUDY 2

CALIFORNIA BAY DELTA CONSERVATION PLAN (BDCP)

One half of California's fresh water flows through the 1,150 square mile "Delta" area in northern California. Historically, it emptied entirely into San Francisco Bay and then into the Pacific Ocean. It supports a rich eco-system, including threatened and endangered species, navigation and agriculture. In addition, its waters have been diverted to agriculture in the San Joaquin Valley and pursuant to a State Water Plan adopted in the 1960's to an urbanizing Southern California. In 1982, an initiative, "Proposition 9", proposing the construction of a peripheral canal skirting the Delta was defeated, leaving in its wake an on-going conflict among Northern California farmers, Southern California developers and environmentalists focused on the allocation of water and the conservation of species dependent upon continued natural water flows through the Delta.

Map by Bay Delta Conservation Plan

Above: *San Joaquin Kit Fox*
Photo source: USFWS / Bay Delta Conservation Plan

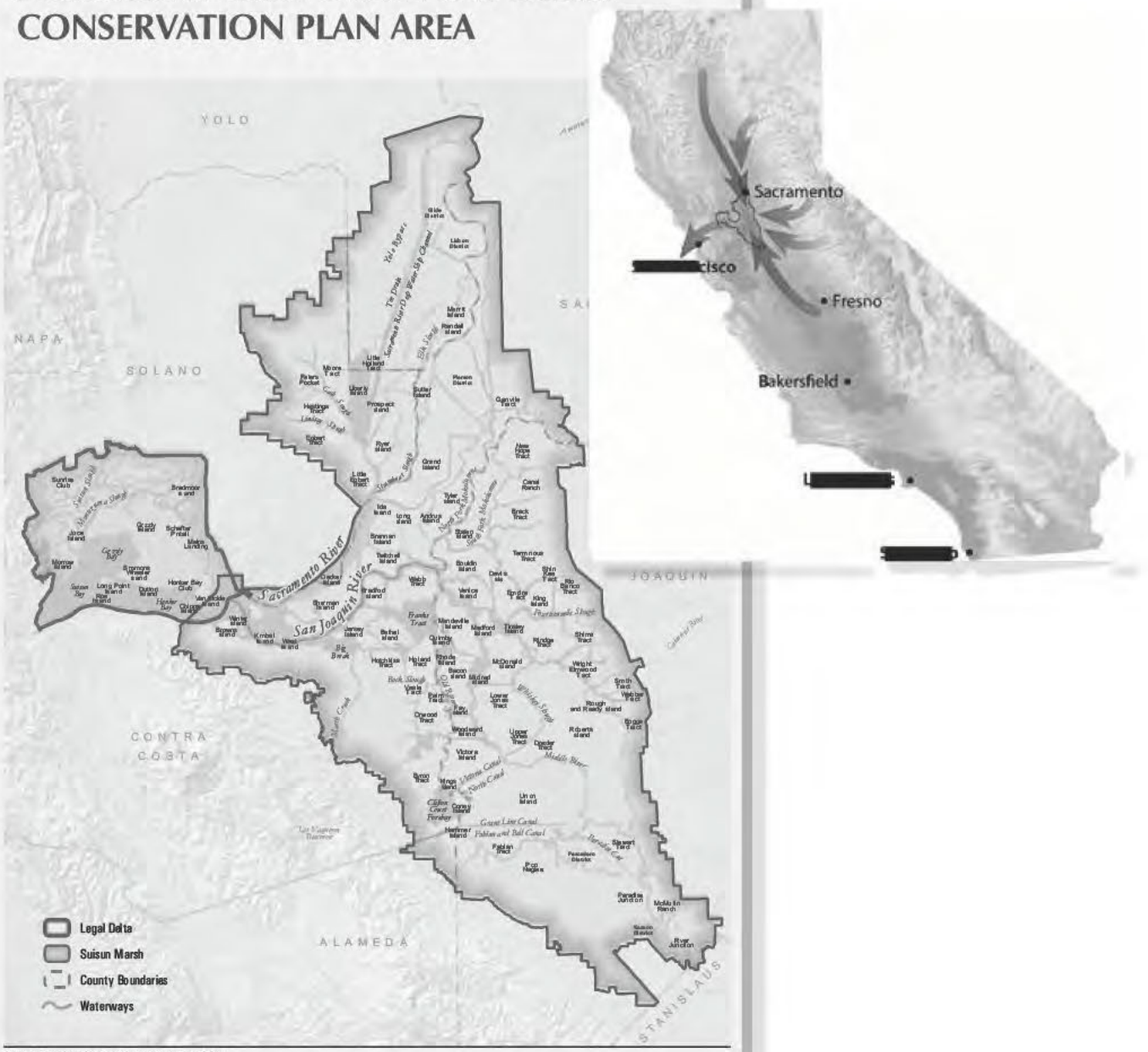
Various efforts followed with the purpose of developing a plan that would reconcile these competing interests and concerns. In 1994, in part based on the HCP and HCP-like experiences, Secretary of Interior Bruce Babbitt and Governor Pete Wilson, established a 25 member State-federal Task Force (the CALFED Water Quality and Ecosystem Restoration program). This commenced a complex series of efforts to manage the Delta water for purposes of providing increased and reliable water supplies to the south and for Delta ecosystem restoration and for the establishment of State institutions necessary to manage such an effort. The Delta Stewardship Council and Delta Plan (adopted by the Council in 2013) resulted from this effort. Currently these two elements, water supply and ecosystem restoration, are being addressed separately (as the "California WaterFix" and "California EcoRestore"), with the intention of fulfilling the requirement of the 2009 Delta Reform Act to meet the co-equal goals.[35]

Clearly, the California Delta is at the center of a political vortex of diverse interests; however, in thinking about the form and use of HCPs or HCP-like approaches, this saga deserves significant further review.

Below: *Why BDCP is Important for California*

Infographic by Bay Delta Conservation Plan

FIGURE 3.3: CALIFORNIA BAY DELTA CONSERVATION PLAN AREA



Maps by Bay Delta Conservation Plan

Above: *Limpkin*
Many animal habitats were preserved through the South Florida Task Force.
Photo source: South Florida Water Management District.

Above: *Kissimmee River Aerial View*
Photo source: South Florida Water Management District

CASE STUDY 3

FLORIDA ECOSYSTEM RESTORATION TASK FORCE

The South Florida Ecosystem Restoration Task Force was established by section 528(f) of the Water Resources Development Act of 1996.[36] The Task Force consists of 14 members from four sovereign entities: seven federal, two tribal, and five state and local government representatives.

The mission of the Task Force is to restore the ecosystem encompassing nearly four million acres of the southern tip of the Florida peninsula, the Everglades and the greater Everglades ecosystem (spanning from the Kissimmee River basin north of Lake Okeechobee to Florida Bay) the worlds largest intergovernmental watershed restoration effort (See Figure 3.4). Its specific duties are to:

- Coordinate the development of consistent policies, strategies, plans, programs, projects, activities, and priorities addressing the restoration, preservation, and protection of the South Florida ecosystem;
- Exchange information regarding programs, projects and activities of the agencies and entities represented on the Task Force to promote ecosystem restoration and maintenance;
- Facilitate the resolution of interagency and intergovernmental conflicts associated with the restoration of the South Florida ecosystem among the agencies and entities represented on the Task Force;
- Coordinate scientific and other research associated with the restoration of the South Florida ecosystem; and,
- Provide assistance and support to agencies and entities represented on the Task Force in their restoration activities.

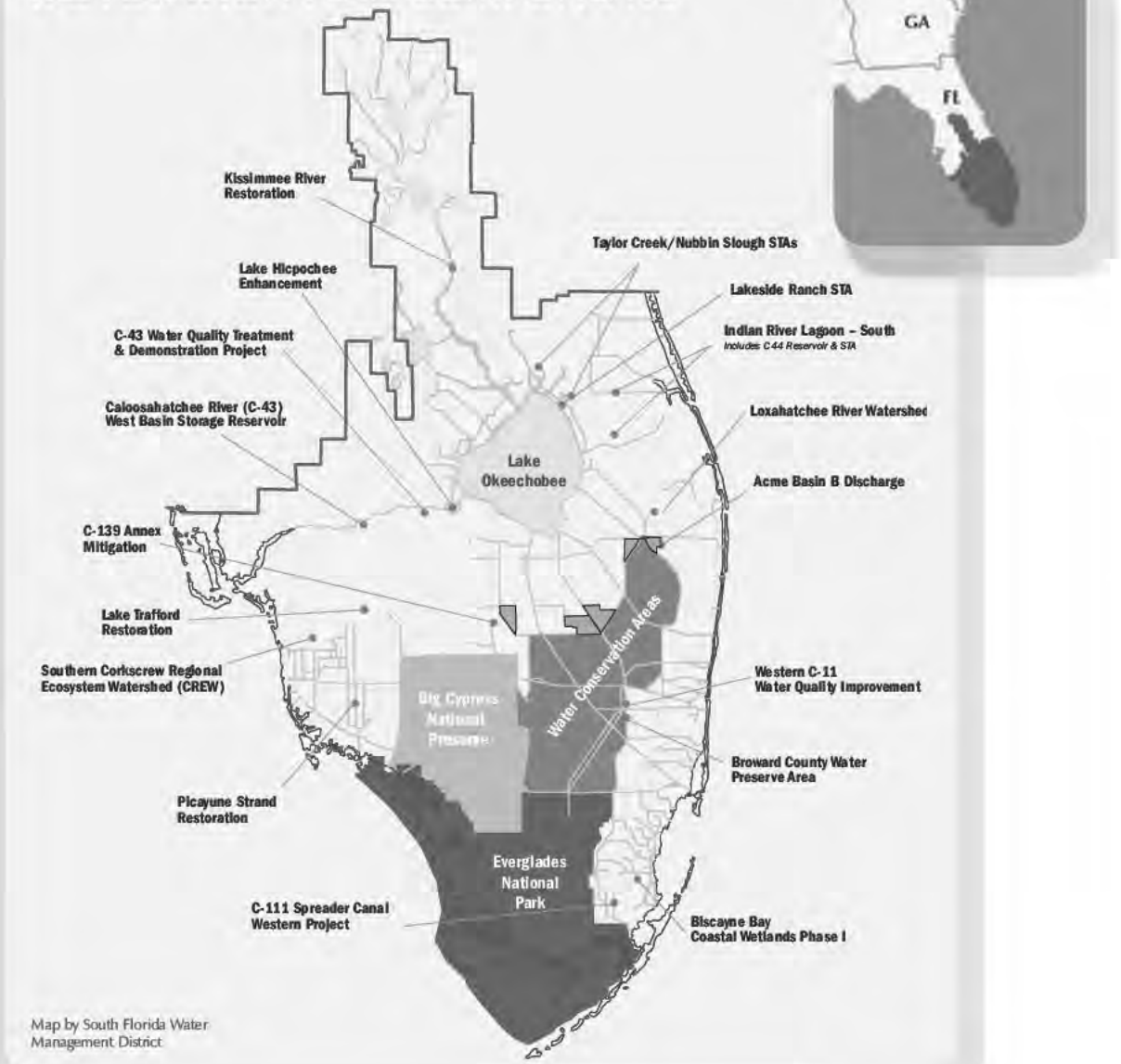
In addition to the Task Force, there is both a Working Group and a Science Coordination Group. The Task Force works by consensus or where consensus cannot be reached, by a two-thirds majority.

The Task Force focuses on a group of specific projects focused on the management of water and other efforts contributing to the restoration of the eco-system of South Florida.

The federal legislation that authorized the Task Force, together with anticipated funding of $8 Billion dollars of federal, State and other funding, provided an effective framework for the effort and appears to provide valuable suggestions for the questions raised by the HCP Dialogue.[37]

This study is important in that the current federal legislation and the resulting Task Force, replaced a somewhat dysfunctional effort that relied on a Governor's Commission in partnership with a federal Task Force (resulting from concerns over compliance with the Federal Advisory Committee Act). Further, the study needs to be reviewed in the context of the history of the State's effort to conserve its wildlife habitat through regulation and innovative funding approaches (e.g., utilizing proceeds from real estate transfer taxes as the basis for obtaining funding for ecosystem conservation).

FIGURE 3.4: COMPREHENSIVE EVERGLADES RESTORATION PLAN COMPONENTS



Map by South Florida Water Management District

Map by The Renewable Energy Action Team

Above: *A desert tortoise emerges from its burrow.*
Photo source: Arizona Game and Fish Department

Above: *View of Cadiz Valley*
Image of the DRECP landscape

CASE STUDY 4

CALIFORNIA DESERT RENEWABLE ENERGY CONSERVATION PLAN ("DRECP")

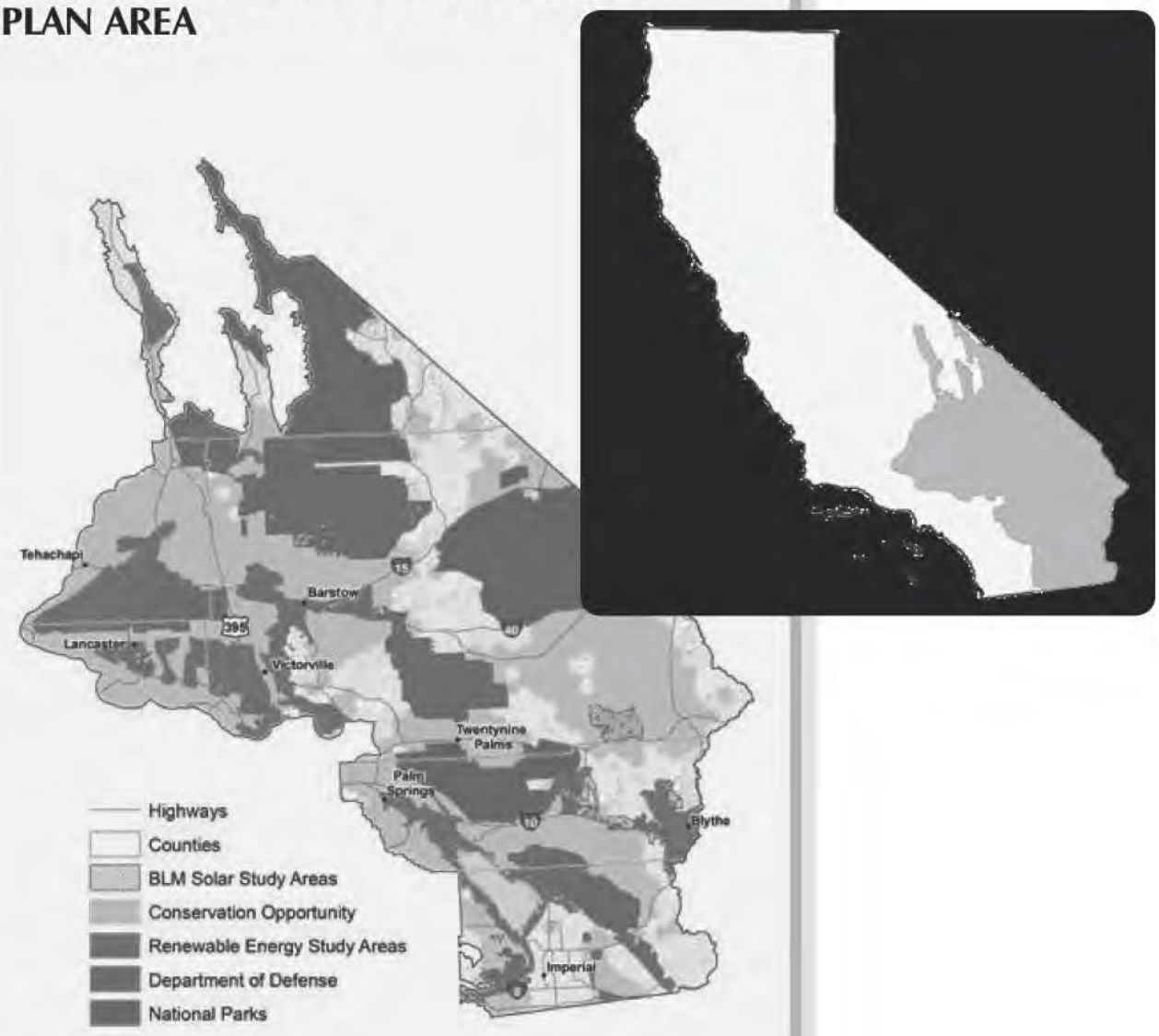
The DRECP effort commenced in 2008 under an agreement among four key California State and federal agencies (California Energy Commission (CEC), CDFW, BLM and USFWS) the Renewable Energy Advisory Team ("REAT"), to expedite the location of renewable energy projects in the 22.5 million acre California Desert in concert with ecosystem conservation (focused primarily on the habitats of threatened or endangered species under State or federal law). In 2015, a draft DRECP was published, with more than 10,000 comments in response (many of which were critical of the plan). The REAT then suspended further processing of the DRECP in favor of a staged process with BLM leading off with the adoption of a Land Use Plan Amendment for the same purpose covering 16.5 million acres of federal lands under its jurisdiction within the Desert.

Comments made on these efforts included the following:

- The DRECP and California Delta efforts demonstrate that such large-scale HCPs are simply unworkable -- primarily citing both the complexity of the biology and the multitude of agencies and interests involved. To others, this called out the importance of thinking through the process and organizational structure so as to avoid such outcomes.
- The effort resulted in the development of key information, processes, systems and protocols that would allow such efforts to move ahead more quickly and competently.
- Key players were initially left out (e.g., the DRECP failed to include the counties as major players from an early point in the effort).
- The DRECP time-line was driven by the interest of the agencies in developing underlying processes (e.g., informational processes) rather than focusing on accelerating the early development of renewable energy resources.

These points are currently the subject of further discussions with key participants in the DRECP process. All of this suggests that this is a valuable case study that deserves further study.

FIGURE 3.5: CALIFORNIA DESERT RENEWABLE ENERGY CONSERVATION PLAN AREA



Map by renewable Energy Action Team

Above: *Sage Grouse in Lek*

Many birds and mammals depend on sagebrush ecosystems in the western United States for survival. In the last century, drastic changes have resulted in alteration and fragmentation of sagebrush communities, negatively affecting more than 350 species of plants and animals.

The BLM strategy to conserve this habitat emphasizes a cooperative approach and provides a framework for implementation.

Photo source: the Bureau of Land Management Oregan and Washington.

CASE STUDY 5

GREATER SAGE-GROUSE PLANS

Greater sage-grouse habitat covers 165 million acres across 11 states in the West; a loss of 56% from the species' historic range. At one time, the greater sage-grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide. The lands involved are currently the focus of major oil and gas operations.

In response, in 2015, the USFS and BLM finalized land use plans that will conserve key sagebrush habitat, address identified threats to the greater sage-grouse and promote sustainable economic development in the West. The plans were a critical component that assisted the USFWS to conclude that the rangeland bird no longer warrants protection under ESA.

- As part of an unprecedented and proactive partnership to conserve the uniquely American habitat that supports iconic wildlife, outdoor recreation, ranching and other traditional land uses, BLM, USFS, USFWS, and the Natural Resources Conservation Service continue to work together to ensure the conservation of the West's sagebrush habitats and with the States as BLM and USFS finalize plans to coordinate their conservation efforts. The involved States have management programs to address the conservation of the bird and significant amounts of its habitat.

- These plans focus on the conservation of "Priority Habitat" areas that have been identified as having the highest value in maintaining the species and its habitat. Land use measures in Priority Habitat are designed to minimize or avoid habitat disturbance. Within Priority Habitat, specific areas have been identified as Sagebrush Focal Areas. The Sagebrush Focal Areas are important landscape blocks with high breeding population densities of sage-grouse and existing high quality sagebrush. The plans also designate General Habitat Management Areas, which provide greater flexibility for land use activities.

These plans contain three common approaches:

- **Minimizing new or additional surface disturbance:** The plans reduce habitat fragmentation and protect intact habitat by implementing surface disturbance caps on development, minimizing surface occupancy from energy development, and identifying buffer distances around leks - areas critical to the sage-grouse life-cycle.

- **Habitat Enhancements:** Improving habitat condition while restoring lost sagebrush habitat can be difficult in the short term; it is often possible to enhance habitat quality through purposeful management. Where there are unavoidable impacts to habitat from development, the plans will require mitigation efforts to enhance and improve sage-grouse habitat.

- Reducing rangeland fire threat Rangeland fire can lead to the conversion of previously healthy sagebrush habitat into non-native, cheatgrass-dominated landscapes. Experts have identified fire as one of the greatest threats to sagebrush habitat, particularly in the Great Basin region of Idaho, Utah, Nevada, Oregon and California. The plans seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush.

Individual State plans contain variations where different approaches or priorities were consistent with overall conservation objectives. The plans honor all valid, existing rights, including those for oil and gas development, renewable energy, rights-of-way, locatable minerals, and other permitted projects.[38]

FIGURE 3.6: GREATER SAGE-GROUSE PLAN AREAS

Developed in coordination with working groups (comprised of BLM and other federal, local and State agencies and landowners). Greater sage-grouse habitat covers 165 million acres across 11 states in the West, a loss of 56% from the species' historic range. At one time, the greater sage-grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide.[39]

Above: *Signing of the Santa Ana River Watershed Group MOU*

The signing provided for watershed-wide Multi-Agency collaboration. At the table: the EPA Regional Administrator, Assistant and Deputy Secretaries of Agriculture, Assistant Secretary of the Army for Civil Works, a Riverside County Supervisor, General Manager of the Santa Ana Watershed Project Authority (the five water agencies) and General Manager of the Orange County Sanitation District.

Photo by Blake Anderson, *General Manager*, Orange County Sanitation District.

Multi-agency Coordinated Permitting and Programs

HCP applicants comment that issuance of an incidental take permit (ITP) under section 10 of ESA does not constitute a comprehensive, "one-stop" permitting procedure, notwithstanding the emphasis on landscape-scale planning, presumably to include environmental media (air, water) other than wildlife habitat. USFWS regulations already allow the use of HCPs for compliance with the Migratory Bird Treaty Act (MBTA) for listed birds. USFWS guidance also allows the combination of HCPs with Eagle Conservation Plans under the Bald and Golden Eagle Protection Act. In some States such as California, Washington, and Massachusetts, HCPs are integrated successfully with State endangered species permitting requirements. HCPs are flexible enough to allow greater permit coordination or integration that would make them more attractive to applicants. In 2012, the first regional HCP was integrated in California with a regional general permit under the Clean Water Act (Section 404)[40], which is administered by the USACE and EPA. Four other regional HCPs in California are pursuing the same CWA integration but they are experiencing technical and policy challenges.[41] Integration of CWA Section 401, which is administered by the States and EPA may be the next step. Can agency guidance be revised to better facilitate integration of ESA and CWA compliance on a regional scale? There is flexibility in the regulations for implementing CWA Section 404, with a variety of integrated approaches to permitting, but new guidance would assist in providing additional support to agency field staff to do integrated approaches specific to HCPs and CWA Section 404.

It has been suggested that an approach to better implement landscape-level approaches would be for the federal government to delegate to States greater authority with respect to wildlife habitat conservation. Others have expressed concern regarding the conservation focus of the State programs. In this regard, USFWS, with some opposition, has recently proposed that its listing criteria be revised to include consultation with affected states during the review of listing petitions. This recognition of States' expertise could be further enhanced through more rigorous implementation

of the PECE criteria,[42] and devolution to qualifying states of greater responsibility for species and habitat protection by means of cooperative agreements pursuant to Section 6 of the ESA or other provisions (e.g., Sikes Act agreements).

In States with their own species protection programs, such as California, USFWS could eliminate overlapping or redundant requirements, and consider whether to delegate responsibility for implementation of ESA as long as States meet minimum requirements and demonstrate their ability to uphold federal law. There are excellent examples of the federal government delegating to states the implementation of federal environmental regulations. More to the point, FHWA delegates to some State DOTs considerable authority with respect to compliance with NEPA, CWA, and the National Historic Preservation Act. Some State DOTs also have been delegated responsibility for ESA compliance. On the other hand, it has been suggested that the delegation of federal ESA responsibility to a State is problematic in that they see some State regulations as far less stringent than their federal counter-parts. (See also endnote 7 regarding the Western Governors Association Initiative.)

Delegation of conservation to state may be effective programmatically or in more area-focused arrangements.

Further, if such delegation were to occur, the differences in the regulatory approaches would need to be considered. For example, several mechanisms exist to obtain pre-listing assurances for candidate species in the event that they become listed. In this regard, Candidate Conservation Agreements with Assurances (CCAA) are becoming more popular as a tool for non-federal participants to gain regulatory assurances that conservation measures adopted in the Agreement will be sufficient to obtain take authorization once the species is listed. One challenge in the use of this tool is that it often has a higher conservation standard than what is required by an HCP once a species is listed. This difference may provide disincentives for its use and cause some applicants to wait instead until the species is listed, defeating the purpose of using CCAAs to assist in preventing listings.

USFWS has also proposed to engage private landowners in the conservation of candidate species that have not been listed. In return for the adoption of approved conservation measures, landowners would be given tradable "credits" to be recognized in the event of a listing as an offset to post-listing requirements, or traded to third parties in the discharge of their ESA mitigation obligations. Although the proposal was made in November 2014, and widely applauded, it has not yet been adopted. In fact, many HCPs include non-listed species, with the federal government stating that if one of these species becomes listed during the permit period, then the conservation measures for that species as detailed in the HCP will be deemed sufficient and the Incidental Take Permit will extend to that species.

CONSERVATION, FUNDING AND FINANCING

It is generally agreed that it makes sense for the lands needed for conservation to be acquired at an early point (e.g., before title of, and regulatory authority over, the lands are fragmented and there is an increase in their economic value as a result of anticipated development). The question has been how are those acquisitions to be funded or financed?

Generally, wildlife conservation is "funded," directly from federal, State and local taxes (e.g., federal fishing and hunting gear taxes), State taxes (e.g., those levied by Florida) on the transfer of real property, and local sales taxes (e.g., those levied by the California counties of San Diego and Orange), property taxes (e.g., tax increment financing under recent California and Texas legislation) and impact (mitigation) or "in lieu mitigation" fees, charges and requirements with respect to activities and mitigation required with respect to specific projects.[43]

The major problem is the paucity of funds for advance acquisition of lands on a landscape level. Such funding is critical to economically mitigate or offset the impacts of the anticipated infrastructure and development (and, any additional lands that should be acquired for "conservation" by the public over and above that required for the compensatory mitigation of projects). And, it is anticipated that such advance funding is to be reimbursed later by mitigation fees and charges. This is not dissimilar to the federal New Town Program of the late 1960's - early 1970's, focusing instead in this case on conservation (but with possible development in mind as well).[44]

It has been suggested that it is sufficient to be able to state in advance that certain lands must be conserved and, in effect, to make them available for conservation by regulation. The problem is that in some situations (e.g., urbanization), uncertainty revolves around which lands should or can be conserved. For example, where the lands have been highly subdivided, the conservation of habitat often calls for careful planning and prioritization to determine which portions can be developed and which should be conserved.

The difficulty increases with respect to private property. For example, a designation of such property for conservation raises issues of a "taking" in violation of federal and some state constitutions. Generally the sentiment of local property owners and elected officials has been that the acquisition of privately owned lands for conservation calls for willing sellers and sufficient funds to purchase the lands. One alternative has been for the agency with land use authority to simply zone the land for low-density development (e.g., one residence per 40 acres). Clearly, these issues are both politically sensitive and legally complex.

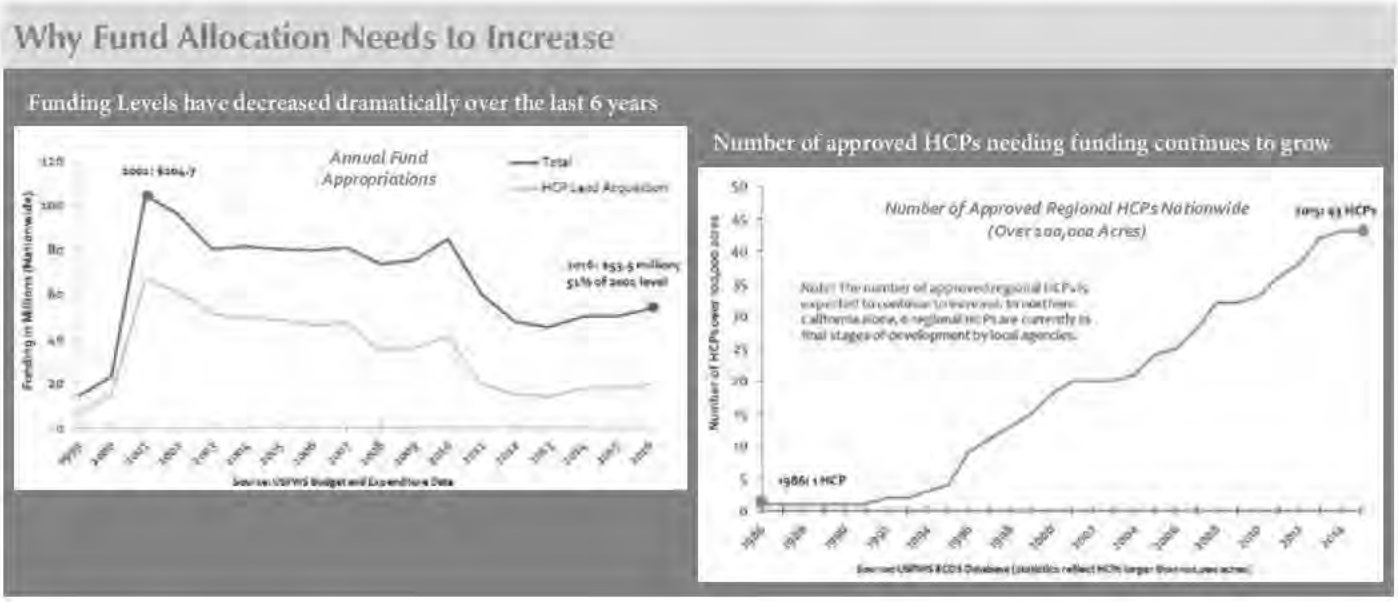
In other cases (e.g., agricultural lands that are not within the path of urbanization or timberlands where urbanization or land-scale mining is unlikely to occur), the use of the lands may be more readily coordinated with needed wildlife conservation and, as a result, there is less need for such early acquisition funding. However, even in these cases, it may be desirable to put in place conservation easements.

As to the lands acquired early for conservation, there are a number of questions to be addressed. For example, what are the available sources of funding for acquisition,

Below: *Why the Fund Allocation Needs to Increase*

The proposed partial restoration of the Fund to $85 million is still much less than the funding provided during the period 2001-2010. Grant requests far exceed the current allocation. The Fund needs to increase substantially in future years to catch up and keep pace with the expected growth in grant requests.

Charts provided by John Hopkins, *Director*, The Habitat Conservation Planning Coalition and National Habitat Conservation Planning Coalition



especially with respect to conservation lands that are anticipated to be used in the future as compensatory mitigation? Or for lands that are required for advance compensatory mitigation, does it make sense, in certain circumstances, to acquire additional lands for conservation which may be over and above that required as advance mitigation? Additional lands can augment the natural resource values of mitigation lands, such as by providing corridors for connecting mitigation parcels, adding to the land area of mitigation parcels and thus increasing the effectiveness of the conservation provided, and by buffering mitigation parcels from effects of nearby land uses. Further, in some cases, the lands to be conserved may provide natural landscapes or value to related, anticipated urban development and the burden of their conservation may be appropriately assessed to such urban development.

There is a critical need for "advance mitigation arrangements" with the provision of mitigation credits for future individual projects.

Lands Available for Conservation

In thinking about a programmatic view, it is important to keep in mind, the nature of the lands involved and, in particular, the extent of public lands available or appropriate for conservation.

Federal Lands

One-third of the Nation's lands remain in federal ownership after significant grants and conveyances in connection with the admission of various states; to allow for mining and timber production and homesteading; to promote and provide highways, canals and railroads; and to allow the productive development of swamp and overflowed lands and other lands. Increasingly, lands have been reserved and set aside for parks, recreation and the conservation of wildlife. The question of the federal contribution to future wildlife conservation in the implementation of HCPs, both in the form of funding and land, is important and a matter of federal policy as we move forward with solar and wind energy projects, inter-state pipelines and transmission corridors, high-speed transportation corridors, oil and gas projects and the development of housing and other infrastructure for our future population.

An initial question related to lands in public ownership is: what portion should be set aside for conservation of wildlife habitat? And, how should that initial allocation be related to the provision of public lands as compensatory mitigation? This is an inquiry that is broader than the question of whether and to what extent may or should public lands be utilized as compensatory mitigation. Clearly, in crafting regional or area-wide HCPs in the past, public lands have been considered in determining the lands to be conserved in the future. Generally, it has been suggested in the past that the financial burdens of HCPs for urbanizing areas should be shared equally (with contributions of funding and land) among local, state and federal sources.

In this regard, a more focused and key issue has been whether and how, e.g., federal lands can and should be available as compensatory mitigation for impacts and effects from activities on private or other public lands. And, whether the conservation of federal lands can provide "durable" mitigation. Generally, in determining compensatory mitigation, it has been suggested that compensatory mitigation must be in place for the life of the impacts for which the mitigation is provided, including the time required for the restoration of the impacted habitat.

It is clear from efforts to address the conservation of the Greater Sage-Grouse and with respect to the DRECP, federal lands, in addition to state and private lands, could play a key role in the long-term the conservation of wildlife habitat and in compensating for the impacts of infrastructure development. In this regard, Sikes Act Agreements recently have been entered into by CDFW and BLM in the California Desert that

Above: *Cadiz Valley*
View across the Cadiz Valley in eastern San Bernardino County.
Photo by Chris Clark
Photo source: KCETlink

provide for the cooperative conservation of lands comprising a BLM grazing allotment voluntarily relinquished by the rancher (permanently ending the grazing of the lands involved). The conservation value of the relinquishment would then provide compensatory wildlife habitat mitigation as required by the CDFW in connection with the impacts of a proposed renewable energy project.

This underscores the desirability of viewing conservation programmatically and more broadly - to look at wildlife conservation as transcending ownership and governance boundaries. Further, the considerations and interests involved are not just related to infrastructure/development and habitat, but, rather, include other considerations and concerns, such as those related to energy, water and air (including climate change) "sustainability", and other resources and values.[45]

State, Local and Other Public Lands

It is important to know the extent and nature of private, local, State and federal lands related to any proposed HCP effort.

There are a broad range of lands that are held in public ownership, including, for example, lands provided to States upon their admission to the Union, open space lands held by local agencies and public agencies in connection with development, rights-of-way of various sorts, lands acquired as the result of a failure to pay property taxes, waters and waterways, etc. These lands may or may not be acceptable as "mitigation" for project impacts, and in either case may add to a conservation reserve.

There are other government and privately owned lands (including, e.g., allotments and rights-of-way overlying BLM lands) that could be available for wildlife conservation in whole or in part through the use of easements, agreements and other similar arrangements.[46] In many cases the conservation of wildlife habitat can be coordinated with other uses of the lands. These lands could be mapped and catalogued with respect to their potential value for habitat conservation.[47]

In thinking about the planning for the conservation of state and privately owned lands, there are several important considerations. In some cases, the lands may be islands in a sea of federal or other lands, reflecting their character as lands provided to a state in connection with its admission to the Union, or as grants to promote railways or canals (in the form of alternate sections of lands), or lands patented in large-scale grants to private owners under various treaties (e.g., the Treaty of Guadalupe Hidalgo), in some cases in excess of 100,000 acres, some of which were subsequently ranched (e.g., Visitacion, Tejon, Irvine, and Hearst ranches). These ranches have been the subject of HCPs and similar arrangements. Often, however, many of the grants, to railroads and to states, are in a checkerboard-like configuration, making development difficult and promoting their use as conservation lands (e.g., the Cadiz Conservation Bank in eastern San Bernardino County).

Infrastructure, Transportation Facilities, Pipelines, Transmission Lines, Renewable Energy Facilities and Oil and Gas Infrastructure

Various kinds of infrastructure can be designed and used in concert with wildlife conservation. In some cases, such as the NiSource pipeline, HCPs have been utilized to obtain permits under ESA. In others, such as the Mid-west wind farms, HCPs are being considered; however, it seems that because of the lack of anticipated land coverage, they would be better addressed using a set of approved protocols or general permit. Solar infrastructure presents a more concentrated land use (normally, 250 600 acres) which have been the subject of individual project ITPs. Oil and gas infrastructure provides yet a different infrastructure configuration and has been the subject of area-wide HCPs (e.g., in the Bakersfield and San Joaquin Valley HCPs) and the State Plans for the Greater Sage-Grouse.

In all of these cases, there is a significant opportunity to address ecosystem and habitat conservation together with the required infrastructure.

Agricultural Lands

Agricultural lands present a significant opportunity to coordinate farming and habitat conservation activities. Further, wildlife habitat can be enhanced in coordination with agriculture activities. This provides not only mitigation for such agricultural uses, but also provides to the farmer or rancher the opportunity to coordinate agricultural uses with conservation, providing the farmer with mitigation credit that can be sold and applied as mitigation for other projects and uses.

Below: *Irrigation in Utah*
Photo by Danny Hart
Photo source: USEPA

Allocating the Burden

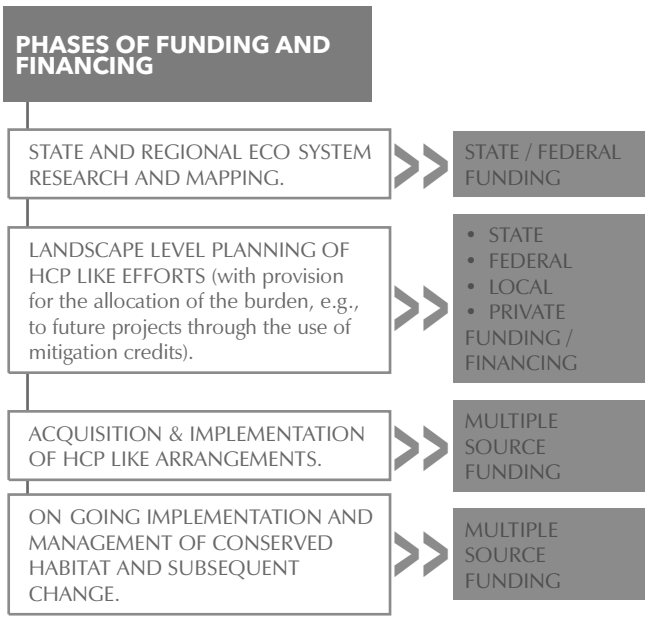
It is critical to evolve from fixed-state plans to strategies and evolving programs.

Ultimately, the benefits and burdens of conservation are shared among public and private interests, but the burdens are usually imposed in a focused manner on "future" private development (as opposed to the owners of lands previously developed and impacting habitat of the same character).[48] A difficult question is how the burden is to be allocated. The answer goes to the character of the private property and the relative duty that attends private and public lands to bear the burden of conservation, which has become increasingly of concern.

With respect to the "public" share, the question goes to the appropriate allocation of the burden of conservation among various "publics" (e.g., the public within the local area, the region, the State or the Nation or those receiving certain services water, transportation, energy, etc.).

This is a very broad topic and deserves significant further consideration.

Funding of HCP Phases



Further, in thinking about the funding and financing of HCPs, it is helpful to consider the various distinct phases of HCP development and implementation. The costs of each of the different phases of the HCP process should be considered individually, as the legal authority and sources of funding and financing may vary, as follows:

- Early broad-scale research, surveys and mapping (and potentially planning) at the regional, state and national levels: these costs are normally borne by government agencies and may be shared. As the surveys and mapping are more focused, or relate to a particular industry or group of projects, the costs may be allocated to or shared by the particular industry or projects to the extent they are benefited and the burden the costs, are allocated to them as part of the HCP process. Until recently, this has largely been part of the HCP planning phase, but resource agencies and others have

been increasingly contributing to early research and mapping to provide ecosystem scale analyses. Further funding for research in this area would be helpful.[49]

- Planning and preparing the HCP: The costs of biological research and analyses and the preparation of a HCP that is focused on a specific "Area of Concern" are generally shared among the private and public sources involved (local, state and federal; in some cases, federal ESA Section 6 funds are available). The sharing of costs is often provided for in a HCP Planning or Implementation Agreement or Memorandum of Understanding that is developed at the outset of the formal HCP process.[50]

- Historically, the sources available for this purpose have included State or federal planning grants supplemented by local government general funds (or in-kind work). In some cases, planning funds have been supplemented by project proponents, such as transportation or energy infrastructure agencies, or private organizations.

- Acquisition of habitat: The costs associated with the acquisition of wildlife habitat are often the most significant in the implementation of the HCP and are paid from public local, State and federal funding sources and, significantly, project mitigation fees or compensatory mitigation.

- In some cases, e.g., County-levied sales tax revenues have been used to mitigate impacts from transportation projects.[51] In other cases, funding has been provided by impact fees on development projects. Since these fees relate to development, the habitat conserved tends to be near the development and the cost of the habitat is inflated due to the inflationary pressure induced by development in the area. In contrast, if there were early up-front funding from local, State and federal sources, habitat could be acquired prior to the escalation in its price due to development pressure. Moneys expended to purchase habitat in advance could be re-paid, at least in part, from development impact ("in-lieu") fees. As discussed below, the question is how to structure such advanced acquisition programs. For example, from the federal perspective, if the federal funds provided are

Below: *Delta Smelt*
Photo source: Bay Delta Conservation Plan

intended to be part of a revolving fund, legislation would be required to provide that the re-payments would be retained in the fund.

- Management: Restoration, Maintenance and Monitoring: The costs related to management: restoration, maintenance and monitoring are often viewed as perpetual and, typically, funded from on-going public sector funding or by the developer as an endowment concurrent with the acquisition of habitat. In some cases, the mitigation may be required only for the term of the impact (including any time required for restoration). These needs have been an increasing focus of HCP funding discussion, especially in light of the need for flexibility due to environmental change, unforeseen circumstances and conservation science development.

- Climate Change: While normally not considered as a part of the funding provided for in the HCP, increasingly, there is a concern that the management of the habitat acquired under HCP will be required to adapt based on a change in climate. As mentioned above, this change may include a shift from plans that focus on a fixed geographic area and ecosystem to a strategic focus that addresses changing circumstances, with less predictable costs and outcomes.

Federal budgets for conservation must evolve beyond a project-by-project to a programmatic focus.

Sources of Funding

Currently, similar to the path described in the story of the Northern California levies, funding for HCPs is relatively ad-hoc. Each HCP planning group has worked to cobble together the necessary funding for the implementation of its plan.

At the federal level, portions of the Land and Water Conservation funds (from oil and gas production from the Outer Continental Shelf lands) are made available, along with funds from the USFWS budget (through the Cooperative Endangered Species Conservation Fund, Section 6 of the Endangered Species Act). However, only a fraction of these revenues have been made available for HCPs and the aggregate amounts available have not increased over the years. Accordingly, as HCPs have proliferated and expanded in scope, the funding amounts available remain much the same and are more thinly spread (see "*Why Fund Allocation Needs to Increase" on page 40*).

As the extent and magnitude of HCPs have grown, advance project-related funding for HCPs has lessened, increasing the need for early programmatic funding, with provision for later individual project participation and payback.

And, while FHWA policy and most state transportation programs acknowledge the benefits of large-scale advance mitigation for impacts of infrastructure projects, funding practices often frustrate efforts to reach this objective. Because federal grants and capital budgets are generally made on a project-specific basis, and states plan accordingly, there can be no accommodation within project budgets for acquisition of habitat that may be unrelated to present needs. FHWA and, by implication, the States, should be encouraged to meet mitigation requirements through reliance on large-scale mitigation banks or credit pools, or other means of providing advance mitigation.

Further, the Administration has not expressed support for pending legislation to authorize federal loans and loan guarantees for the purpose of acquiring HCP habitat, known as the Infrastructure Facilitation and Habitat Conservation Act. Nonetheless, the concept has been incorporated into the new Water Infrastructure Finance Innovation Act (WIFIA), to be administered jointly by EPA and the USACE, and is a pending amendment of the existing Transportation Infrastructure Finance Innovation Act (TIFIA) program. CEQ and others could be encouraged to announce support for the pending legislation, the TIFIA amendment, and timely implementation of WIFIA.

Further, other funding sources could be made available. For example, in Colorado, transferrable income tax credits are available for the donation of conservation easements to qualifying holders.[52]

To the extent that State funding is available, it tends to be uncoordinated and what little funding is available tends to be provided separately through its infrastructure programs focused on transportation, energy, water and air quality (and climate change). Again, broader funding pools would make sense. For example, in Florida there are provisions for collaboration in the conservation of water resources (including wetlands). This concept could be applied to uplands and a variety of public agencies.

In California, counties have stepped up to fund transportation (and are now the primary funders of highway maintenance) and, increasingly, habitat conservation.[53]

Similar to the lessons from the Northern California levies, individual project proponents have funded individual HCP efforts; however, as the magnitude of the efforts and their regulatory complexities and demands (e.g., for increased detailed research and information) have grown, the willingness of project proponents to provide advance funding for HCPs has diminished. At the same time, while these interests recognize the value of the effort, as with the levy proponents, they cannot or will not individually bear the up-front burdens. They are willing, however, to bear the allocated burden to the extent of the mitigation required with respect to their projects as the projects are realized.

There is a need to develop stable long-term public and private landscape stewardship institutions (with provision for landscape-level monitoring, management and adaptation).

Accordingly, in thinking about the funding of the individual phases of a HCP, as described above, we suggest the following:

- ***Early research, surveys and mapping*** are critical and need to be a shared State and federal undertaking, likely at a State level with the idea of establishing State level guidance and identifying, as suggested above, opportunities and "areas of critical concern" or areas where focused plans and efforts would be helpful in reconciling conservation concerns with possible future infrastructure development or other human activities. This work could be coordinated with the efforts of the State Wildlife Action Plans and the Landscape Conservation Cooperatives (and coordinated with other public agencies and interests, as appropriate) and is consistent with the California Regional Sustainability Initiative of the California Strategic Growth Council, as well as the thrust of the South Florida Ecosystem Restoration effort, etc. providing a State-level framework for further habitat conservation efforts.

- ***Early Advance Mitigation and Conservation efforts*** in concert with anticipated infrastructure and development could be funded and financed from State and federal sources (either as grants, loans or loan guarantees) under financing arrangements such as those discussed below, contemplating repayment, related to mitigation burdens, from tax revenues, project mitigation and impact fees (including ILFs) and credit purchases. Although FHWA policy and most State transportation programs acknowledge the benefits of large-scale advance mitigation for impacts of infrastructure projects, funding practices often contravene this objective. Because federal grants and capital budgets are generally made on a project-specific basis, and States plan accordingly, there can be no accommodation within project budgets for acquisition of habitat that may be unrelated to present needs. FHWA and, by implication, the States, should be encouraged to meet

mitigation requirements through reliance on large-scale mitigation banks or credit pools, or other advance mitigation approaches.

- ***Conservation management*** could be shared among project proponents and the public(s) as established by law, or agreed upon, with the management undertaken by public agencies, non-profit conservation organizations or, perhaps, the project operators.

- ***Subsequent changes*** related to climate change and other circumstances e.g., unforeseen or not under the control of the project operators) need to be considered further. Some have suggested that the burden should be in part, or whole, a cost of the project. Consideration of this suggestion raises foundational questions regarding the function of public institutions as "safety nets" or as providing the means for the public sharing of certain risks related to future uncertainty.

Financing Arrangements: Impact Fees and Mitigation Credits; Mitigation Banks and Credit Pools

While "funding" looks to the sources of money and in-kind mitigation and conservation, "financing" is concerned with the provision of current funding and commitments, expectations and arrangements for future funding and the terms of such arrangements. The following briefly discusses the use of local taxes (real property and sales), Infrastructure Banks, Mitigation Banks and Credit Pools, all of which could be the subject of an HCP or HCP-like arrangement.

Mitigation and Impact and In-lieu Fees ("ILFs").

In addition to provisions for on-site mitigation (the lessening or offsetting of anticipated project impacts or effects), development fees and charges (e.g., ILFs under the CWA)[54] may be required as "compensatory mitigation", including the acquisition and management of lands to mitigate the effects or impacts of a particular project or action. These fees and charges then may be made available for mitigation lands or management acquired by a public agency or conservancy or may be used to repay loans used for this purpose, including the repayment of funds provided for the acquisition of landscape-level habitat as "advance mitigation".

A significant challenge is the comparative valuation of impacts and compensatory mitigation. As indicated, this is especially difficult when working to integrate compensatory mitigation under CWA and ESA, as well as State and local regulations. This topic needs significant further attention.

It is important to note that if land were to be acquired in advance for conservation with public funds, sufficient to fully offset the threat to a species, it could be argued that the habitat has been acquired and conserved and that there would be no basis for requiring, in arrears, further mitigation. Accordingly, the arrangements for compensatory mitigation fees should be put in place at the time of the initial acquisition and dedication of the habitat to conservation, carefully anticipating that the conservation attained will be the basis of mitigation credits or costs to be available or assessed to future projects or activities as compensatory mitigation.

Above: *Sunrise over Steens Mountain, Greater Sage Grouse Lek*

The effect of rangeland fire and invasive plants on sagebrush habitat continue to threaten the survival of the Sage Grouse.

Photo source: the Bureau of Land Management Oregan and Washington.

Commitments of Infrastructure Funding Streams.

Transportation has led in an effort to acquire and conserve habitat in advance, utilizing County sales tax revenues, of landscape-level conservation, and utilizing the related "mitigation credit" for the later mitigation of transportation projects. In thinking more broadly about the allocation of the burdens of conservation, it may be determined that a particular portion (percentage of the costs) should be allocated to and borne by development (perhaps both past and future) within a region. A portion of the costs then could be allocated to the region through property-related taxes or transportation or other charges (e.g., energy, water, etc. or perhaps a "sustainability" charge). The underlying intent would be to fairly distribute the regional burden.

Real Property and Tax Revenues and Bonds.

State real property and real estate transfer taxes (together with the proceeds from bond financing based on such anticipated proceeds) have been used in California, Florida and Texas to acquire and conserve wildlife habitat.

Starting in 1972, Florida created one of the nation's most extensive public acquisition programs for the conservation of habitat conservation, funded by an excise tax on mineral extraction and documentary stamp tax on real estate transfers and utilizing bonds to provide immediate funding. These programs were recently curtailed, but were reactivated, in part, by a 2014 State Constitutional amendment that passed with a 75% affirmative vote of the electorate.[55]

Infrastructure Banks.

Recently, California authorized the establishment of Enhanced Infrastructure Financing Districts, allowing the adoption of an infrastructure financing plan, tax increment revenues, and the issuance of bonds that could be utilized for this purpose.[56]

Mitigation/Conservation Banks and Credit Pools.

The idea of mitigation or conservation banks developed in the 1980s in response to the national regulation of the dredging and filling of waters of the United States and the taking of endangered species. The idea was that wetlands or the habitat of endangered species would be privately-owned and cared for in perpetuity as a Mitigation

or Conservation "Bank" and, in turn, the owner of the Bank would sell mitigation credits " from the Bank as mitigation for the dredging and filling of, or impacts to, other wetlands and the take of endangered species. The concept evolved to include endowments for the perpetual care of the lands conserved and arrangements to keep track of the interests sold. In some states, Banks (including the endowments provided) are regulated.

A similar approach is currently being explored in California that involves the establishment of "pools" of "mitigation credits" based upon the mitigation value of the relinquishment of BLM grazing allotments, with the mitigation credits being tracked by the related county and certain assurances provided to the State regarding the federal lands to be conserved. The distinction between a "Bank" and a "Pool" is that a "Bank" includes provision for both tracking mitigation credits AND the care of the lands underlying the "mitigation" being provided. A "Pool" only tracks the mitigation credits. The "Pool" could be used when the lands are held or owned by a public agency, such as BLM or a State agency.

A key issue with respect to mitigation banks or pools is the establishment of the monetary and conservation value of a mitigation credit and the rules for its use as "currency" (its value in compensating and offsetting certain impacts, defined in terms of the character and magnitude of the conservation benefit). Historically, from the outset of the concept of mitigation (in the late 1960s), mitigation developed as a way to avoid, lessen or offset specific impacts or effects of an action or project on wildlife and wetlands. Initially, this was done project-by-project, requiring extensive and often detailed and intricate measurement of impacts/effects and proposed off-setting mitigation essentially involving a system of project-by-project "bartering". In contrast, the establishment of a mitigation bank or pool provides the basis for a broader system of mitigation, including credits based on more generic habitat values.

Examples of the utilization of "generic" habitat measures include: the use of Coastal Sage Scrub ("CSS") in a Section 4(d) rule as a surrogate in permitting the take of Coastal California Gnatcatchers (five percent of the CSS was allowed to be taken/removed whether or not occupied by federally-listed gnatcatchers and the remainder was to be conserved); and, provision in the Western Riverside Multiple Species Plan that allowed the loss of habitat for "Covered Species", including that of federal and State-listed species (but not including the habitat of "narrow endemic species" or riverine or riparian habitat under Section 404 or the California Streambed Alternation Agreements) provided that adequate progress (as defined by the Plan general as being in "rough step") was being made in conserving 530,000 acres of habitat within the 1.2 million acres comprising Western Riverside County under the Western Riverside MSHCP.

In connection with the early eco-system surveys and research discussed above, it may be possible, in a similar manner, to establish such generic habitat values in relationship to mitigation credits, thereby avoiding the project-by-project pairing of impacts and proposed mitigation.

It would be helpful if the elements (e.g., templates) and practices of such conservation banks and pools could be established under State and federal regulations.

The mitigation banks and pools are important in the context of an HCP in that they provide a more efficient way to acquire landscape-level mitigation and then allocate the costs utilizing the sale of individual credits. This is effective large-scale conservation, while reducing the need for the evaluation of mitigation project-by-project and the cost of mitigation (due to early acquisition of mitigation).

Chapter Four: Management, Monitoring and Enforcement

The effectiveness and continued use of the HCP concept depends on its enforcement.

A longstanding problem with HCP implementation is inadequate transparency and compliance monitoring. Most HCPs and associated monitoring reports are not posted online. Without easy access to these documents, the public cannot readily understand the conservation requirements that permittees must follow or verify compliance with the requirements.

Several studies have shown that USFWS struggles with resources to monitor whether permittees are complying with their conservation commitments. In a 2009 independent evaluation of the HCP program that FWS commissioned, the authors found that nearly 75% of FWS staff surveyed said that they had neither sufficient time nor resources to monitor compliance and implementation of the HCPs they supervised. Resulting issues included "performance data are not tracked and individual HCP data records often contain incomplete sets of data; data that are supposed to be collected often are not and thus many HCP records are incomplete."[58] Except for the Olympia Field Office, the majority of USFWS field offices visited had "no standard operating procedures for validating compliance reports or conducting site visits."

Implementation Agreements are only as effective in reconciling various interests and concerns as their enforceability.

Other researchers have found similar problems at the root of the HCP program, including violations of monitoring requirements and neglect of adaptive management;[59] inadequate use of science;[60] absence of criteria to determine HCP effectiveness;[61] and improper recording of land use restrictions from HCP conservation easements.[62] These problems raise serious questions about the extent to which many HCPs are benefitting covered species, particularly because many HCP mitigation measures are proposed with little to no prior evidence of their effectiveness at offsetting adverse impacts. These problems also question the ability of HCPs to manage for change and uncertainty, particularly in light of climate change. Although there are good examples of HCP monitoring, the absence of attention, resources, and incentives to engage in and disseminate basic monitoring information, let alone adaptive management, is a chronic problem that undermines the legitimacy of the HCP program.[63]

As part of the CEQ Conversation, the suggestion was put forward that at the commencement of each HCP process, a transparent system of record-keeping, monitoring, management and enforcement should be instituted with respect to the HCP and made generally available on-line to the public through-out and following its term.

Chapter Five: Conclusion and Next Steps

USFWS has proposed revisions to its Mitigation Policy[64] and is expected to publish in the near future a revised version of its HCP Handbook. However, it is anticipated that both of these efforts will continue to focus on regulation. What is needed is a broader vision.

The sense of our Dialogue is that DOI and others at the federal, State and local levels should focus increasingly on a broad programmatic, landscape-level approach to habitat planning and conservation in coordination with anticipated future infrastructure and development. In such a programmatic approach, the concepts underlying HCPs make sense; that is, collaborative innovation, focused on geographic-based plans, implemented through multi-agency/interest agreements and addressing wildlife conservation in concert with anticipated infrastructure and development and in consideration of "sustainability" (including, for example, climate change).

Elements of this programmatic/landscape-level approach include:

1. Greater focus on cooperative State/federal early broad-scale (statewide) science and mapping, together with the establishment of information systems (for gathering, managing and the "transparent" sharing of information).

2. State-wide and regional scoping of the conservation of eco-systems in anticipation of infrastructure, development and other human activities and in consideration of sustainability, under the leadership of the respective state and in cooperation with the respective federal and local agencies and others.

3. Early landscape-level acquisition and conservation of wildlife habitat (including provision for advance mitigation, and utilizing, e.g., mitigation banks and credit pools and other arrangements for reimbursement programs).

4. Establishment of early funding and financing mechanisms for early science/mapping, advance landscape-level acquisition for conservation and advance mitigation (with provision for repayment from, e.g., impact fees, in lieu-fees from future development and other sources).

5. Use of more "standard form" HCPs to address more focused areas of concern involving conflicting interests and future uses and activities.

6. Increased collaboration among the respective constituencies of affected local, state and federal agencies and interests (including the better alignment of governance policies and practices); and, increased efforts to better understand the elements of collaboration, including, e.g., principles and practices of dialogue, scoping and related leadership.

The focus at the private and public national, State and local levels should be on broad programmatic approaches based on: collaborative innovation, landscape-level plans, implemented through multi-agency/interest agreements, addressing wildlife conservation in concert with anticipated infrastructure and development … and with a view to "sustainability" and "resilience".

Continued Dialogue is critical in this time of dramatic change resulting from innovation in information technology and deep concerns relating to wildlife conservation, "sustainability" and "resilience".

Suggested immediate next steps of the HCP Dialogue include:

1. Continue research regarding past Habitat Conservation Planning efforts, including, e.g., the five efforts described in Chapter 3 Case Studies:
   - San Francisco Bay-Delta Plan;
   - Chesapeake Bay Program;
   - Multiple State Greater Sage-Grouse Plans;
   - South Florida Eco-system Restoration Program; and,
   - California Desert Renewable Energy Program.
2. Convene (with the Environmental Law Institute as host and in collaboration with others) further small, narrowly focused dialogue sessions regarding:
   - multiple agency programmatic collaboration (regarding permitting, planning and other efforts);
   - funding and financing of the early science and surveying and landscape-level conservation efforts described above; and
   - an exploration of the principles and practices of successful collaboration.
3. Consideration of "pilot" or "model" collaborative HCPs, studies and programs.
4. Possible expansion of the Report into a book.
5. Establishment of a CCG web-site that includes this Draft Report, with the idea that further comments and ideas would be welcomed, vetted and incorporated into the evolving Report (in a Wikipedia-like process)—possibly undertaken as a collaborative effort with other organizations (such as the National Habitat Conservation Planning Association) under the over-sight of a very small review group (e.g., reflecting the spectrum of interests and views involved).

Next Steps:
» **Research case studies;**
» **Further dialogue sessions on multiple agency coordination, funding, the practice of collaboration and, possibly, "sustainability" and "resilience".**
» **Exploration of "pilots" and "models".**

In closing, it appears from the HCP Dialogue, that we need to continue to progress from our focus on silo-like, project-focused, regulatory programs to programmatic planning and implementation efforts, focused on landscape-level conservation in anticipation of infrastructure and development and in consideration of "sustainability." Such an approach calls for early research and mapping, advance landscape-level conservation and mitigation, cooperative funding, multi-agency coordination, collaborative planning among the affected constituency of agencies and interests and, greater integrated and coordinated permitting and transparent monitoring and enforcement.

The design and model of this Dialogue is the same a loose collaboration of those within the affected agencies and interests focused on innovation with respect to the future of Habitat Conservation Planning. Comments by the readers would be welcomed.

Endnotes:

1 Reports by CLEANR on the dialogue sessions include: Alejandro E. Camacho, Elizabeth Taylor and Melissa Kelly, Lessons from Area Wide Multi Agency Habitat Conservation Plans in California, 46 ENVTL. L. REP. 10222 (2016); and, Alejandro E. Camacho, Elizabeth Taylor, Melissa Kelly, & Stephanie Talavera, Emerging Regulatory Experiments in Permit Process Coordination for Endangered Species and Aquatic Resources in California, 46 ENVTL. L. REP. 10131 (2016).

2 See the reference in Appendix A 1 to earlier reports regarding aspects of the Dialogue prepared by CLEANR including "lessons learned" and the financing of HCPs and California Natural Community Conservation Plans. This report is prepared by CCG and focuses primarily on the need for an increasingly programmatic, land scape level approach in the implementation of the HCP concept. The intent of this Report is to reflect the "sense" or synthesis of the input of the more than 100 participants in these sessions, interviews and small meetings. It does not reflect the views of every participant or group of participants. In some instances, the need for more focused studies of specific practices has been suggested, including, for example, enforcement, climate change, the geographic extent of HCPs and the time and expenses expended in their preparation, adoption and implementation. While these more focused topics have been considered in the preparation of this report and more detailed studies may well be helpful, it is clear that more "programmatic" and landscape level approaches to habitat conservation will significantly improve both our efforts to conserve wildlife habitat as well as our ability to efficiently plan and implement infrastructure and other development (and may inform, as well, approaches to sustainability). Perhaps more significantly, a programmatic approach provides a "vision," conceptual framework, or understanding that can be embraced by the varied constituency of affected agencies and interests by all of us.

3 Kelly, Robert, BATTLING THE INLAND SEA (University of California Press, 1998)

4 This same emphasis is expressed in the recent Presidential Memorandum, "Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment" (November 3, 2015): the emphasis on innovative, early, programmatic approaches, beyond project by project ad hoc regulation, to address the conservation of wildlife habitat "simultaneously" with planning for economic development.

5 H.R. REP. No. 97 835 (September 17, 1982) ("Conf. Report), reprinted in 1982 U.S.C.C.A.N. 2960.

6 See sidebar images on Page 1. The South Florida Ecosystem Restoration Project was established, and funded in part, by the Water Resource Development Act of 1996, under the direction of a state, federal and tribal Task Force to direct its implementation. Significantly, Senator Graham and, former Governor of Florida, led the effort to adopt the enabling legislation. The model for this collaborative effort was an earlier HCP effort focused on North Key Largo, Florida, which was established by the Governor's Executive Order when he was Governor of Florida (resulting in the conservation of virtually all of the undeveloped portion of the twelve mile long key) and reflected, as well, other state federal regional efforts (see the references to the Delaware River Basin and Chesapeake Bay Programs above). Prior to the 1996 WRDA legislation, the effort leading up to that federal legislation was undertaken by a Florida Governor's Commission in tandem with a separate federal task force under the direction of George Frampton, then Assistant Secretary of the Interior for Fish, Wildlife and Parks. This institutional structure was thought to be advisable in order to comply with the Federal Advisory Committee Act and was addressed in the federal legislation by the establishment of the State/Federal Task Force.

7 This broader landscape level, programmatic focus is reflected in: Lynn Scarlett et al., LARGE LANDSCAPE CONSERVATION: A Strategic Framework for Policy and Action (Lincoln Institute of Land Policy, 2010); David Hayes, THINKING BIG, Testimony (The Environmental Forum, Environmental Law Institute, November December, 2013); Secretary of Interior, Sally Jewel, Order No. 3330, Improving the Mitigation Policies and Practices of the Department of Interior (Dept. of the Interior, Oct. 31, 2013); JOEL E. CLEMENT, ET AL. A STRATEGY FOR IMPROVING THE MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF INTERIOR; A REPORT TO THE SECRETARY OF INTERIOR FROM THE ENERGY AND CLIMATE CHANGE TASK FORCE (April, 2014); Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Investment (November 3, 2015); and USFWS Notice, Proposed Revisions to the U. S. Fish and Widlife Service Mitigation Policy (Vol. 81, No. 45, Fed. Reg. March 8, 2016. See also, the Western Governors' Species Conservation and ESA Initiative. "Among other things, the initiative will create a mechanism for states to share best practices in species management; promote and elevate the role of states in species conservation efforts; and explore ways to improve the efficacy of the Endangered Species Act. "; and, WGA Policy Resolution 2016 08 regarding Species Conservation and the Endangered Species Act. http://www.westgov.org/initiatives/esa initiative; http://www.westgov.org/images/2016 08 Species Conservation and ESA.pdf

8 See generally, Public Land Law Review Commission, HISTORY OF PUBLIC LAND LAW DEVELOPMENT (1968).

9 Scarlett, Lynn, et al., Large Landscape Conservation: A Strategic Framework for Policy and Action (Policy Focus Report, Lincoln Institute of Land Policy, 2010) (see endnote 7, supra).

10 "The Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) have finalized land use plans that will conserve key sagebrush habitat, address identified threats to the greater sage grouse and promote sustainable economic development in the West. The plans were a critical component that assisted the U.S. Fish and Wildlife Service (USFWS) to conclude that the rangeland bird no longer warrants protection under the Endangered Species Act (ESA)." http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html, 1/30/2016). See graphic, Figure 3.6.

11 See, e.g., Dixon, L., et al., Balancing Environment and Development Costs, Revenues, and Benefits of the Western Riverside County Multiple Species Habitat Conservation Plan (The Rand Corporation, 2008). ("Rand Study"); and, Economic & Planning Systems, Inc., Economic Effects of Regional Habitat Conservation Plans, prepared for the California Habitat Conservation Planning Coalition, 2014; and, [papers by Wachs and Lieberman]. Wachs, M. and Lederman, J., Transportation and Habitat Conserve Plans, Improving Planning and Project Delivery While Preserving Endangered Species (2014).

12 Comments by Dr. W. Spencer, Conservation Biology Institute, in letter to T. Adams, National Habitat Conservation Planning Coordinator, USFWS, dated September 4, 2015.

13 https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/default.asp (last time visited, June 11, 2016).

14 E.g., State Wildlife Action Plans are required by federal law in order for a state to receive funds through the Wildlife Conservation and Restoration Program. (http//teaming.com/state wildlife action plans swaps). Landscape Conservation Cooperatives ("LCCs") were established by an order of the Secretary of the Interior in 2010. The 22 LCCs (See the graphic attached as Figure 3.1) collectively form a national network of land, water, wildlife, and cultural resource managers, scientists, and interested public and private organizations within the United States and across international borders that share a common need for scientific information and interest in conservation. As collaboratives, LCCs seek to identify best practices, connect efforts, identify gaps, and avoid duplication through improved conservation planning and design. Partner agencies and organizations coordinate with each other while working within their existing authorities and jurisdictions. http://www.doi.gov/lcc/index.cfm. In addition, NGOs such as The Nature Conservancy and The Conservation Fund, operate nationally to address conservation concerns.

15 See, Pelham, Thomas G., Regulating Areas of Critical State Concern: Florida and the Model Code, Urban Law Annual; Journal of Urban and Contemporary Law, Volume 18 (January, 1980). The "special area" concept is reflected in the provision for Special Area Management Plans in the CZMA and has been applied by USACE in upland areas (E.g., USACE, Guidance Letter O5 09, 2005). This idea of tiering is flexible and may be applied to research and surveying of eco systems, with the idea of identifying areas where further more detailed planning is called for, or it may take a further step and provide that more state regulation or oversight may be or is required with respect to the identified areas. By contrast, in some cases, the tiered planning approach has been preempted from the outset by special management areas which have been established by State legislation and accompanied by special regulations and management. For example, San Francisco Bay, the California Coastal Zone, the New Jersey Pinelands, Lake Tahoe, the Delaware River Basin and Chesapeake Bay.

16 See, the Gateway Basin, Appendix D.

17 Recent efforts, and ideas going forward, within the Department of Interior and more broadly and set forth in footnote 13, supra. Earlier efforts were pursued by California, with respect to the water system in the 1960s's and 1970's, and then the development of information systems regarding its eco systems generally with the "CERES program" in the 1990's (CERES was significantly cut back a decade later during an economic downturn); and, by Florida during the 1970's through the decade following the turn of the Century, focused on the land/water eco system of South Florida. The federal government focused on its federal lands in the late 1960's with Report of the federal Public Land Law Review Commission in 1969 and proposals (for example by Senator Jackson and Robert Ehrlichman, Domestic Advisor on President Nixon's staff) for a new National Land Use Policy and Act toward the end of President Nixon's term, which ended with his resignation (for a discussion of ideas underlying those proposals, see the Mandelker article cited in Appendix C). Currently, the California and federal focus has expanded once again with the increasing concern regarding Climate Change and Sustainability (with the establishment nation wide of the federal DOI Landscape Conservation Cooperatives program). And, of course, there was the environmental revolution of the late 1960's and early 1970's, during which major federal and state legislation was enacted. This time evokes a similar possibility of change.

18 Historically, there has been a sense within the environmental and development communities of "institutional anger", one against the other, with regulatory processes providing the battleground. This stand off may be changing and moving increasingly toward collaboration, whereby there is an appreciation of the value of nature as well as the need for development to accommodate our growing population. In 1994, the regional, State and federal transportation agencies undertook a collaborative planning process, essentially like that used with respect to the San Bruno Mountain HCP, pursuant to 4(f) of the National Transportation Act and Section 106 of the National Historic Preservation Act, to address

concerns regarding impacts to the residence and workshop of Sam Maloof, at the time, the foremost woodworker in the Nation. A plan for its conservation was arrived at after three years and the historic structures were relocated and conserved at significant cost (in excess of $20 million). At the time, some were of the view that Maloof was greedy and that it had cost transportation efforts "dearly". In turn, Maloof, felt a deep anger toward the transportation agencies for disrupting his property and life. Now, 20 years later, there is a common feeling that the six plus acre site with its draught resistant garden, art gallery, historic structures and wood working business (which has carried on Maloof's legacy, producing unique, quality, crafted furniture), is a special, prized, element of the regional community. A similar kind of rivalry has existed in the funding of transportation and eco system efforts with the sense that providing for funding of wildlife habitat through state and federal transportation related legislation takes away from the building of transportation facilities the sense that there is not enough porridge to go around. On the other hand, the passage a San Diego County measure in 2008 [check] to increase local sales taxes to support transportation projects was aided by the inclusion of funding for environmentally related projects evidencing growing collaboration between the two camps.

19 See, as background, Collaboration in NEPA, A Handbook for Practitioners (CEQ, 2007), describing various applications of this idea and sources. Interestingly, in keeping with the times, it appeared to be based on ideas regarding coordination and conflict resolution rather than the concepts underlying collaboration.

20 See, http://www.sustainablecommunities.gov.

21 **Comment**: D. Olson, USACE: "An important challenge is how to use that information in an effective manner. Additional tools or approaches are needed to take the vast amount of available information to help do better planning and decision making. There is also a need to critically evaluate the quality of that data, because some of it might be many years old. Much change in the landscape might have occurred after the data were compiled so that those data no longer accurately reflect the current landscape."

22 "Interestingly, Section 101(a) of NEPA states: "The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly **the profound influences of population growth, high density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality … it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations**, to use all practicable means and measures, including financial and technical assistance, in a manner calculated… to create and maintain conditions under which man and nature can exist in productive harmony...."

23 E.g., the DRECP covers more than 22 million acres in the California Desert with a broad variety of agencies and interests involved. The Bay Delta Conservation Plan involved not only the eco system, but an interest in providing water for the estuary and its wildlife, as well for the San Joaquin Valley the Nation's bread basket, and for a water hungry population in the desert of Southern California. After receiving more than 10,000 comments on a draft EIR for the DRECP, the lead agencies chose to restructure the process and proceed first with a BLM led process for the adoption of a LUPA under FLPMA, covering approximately 16 million acres of DRECP lands. Understandably, this would address land uses within the federal lands administered by BLM and could later be expanded to cover the remainder of the 22.5 million acres envisioned.

24 One reviewer of this paragraph, noted that in researching the HCP processes, they appeared to involve a great deal of hostility and that it was naïve to suggest such collaboration as a standard practice. However, it is clear that the San Bruno Mountain HCP, and others, were characterized by such collaboration and underlying "dialogue". The suggestion is that our practice in this regard is evolving and that collaboration and dialogue should be promoted.

25 **Comment**: D. Olson, USACE: "There are different types of boundaries that need to be considered, such as political boundaries (e.g., states, counties, municipalities), agency boundaries (e.g., resource and activity jurisdiction; regulatory and non regulatory), and ecology based boundaries (e.g., watersheds, eco regions). There may be other types of boundaries that warrant consideration. To promote collaborative efforts among agencies and stakeholders there probably needs to be guidance, agreements, or other types of written documents that give agency staff "permission" or direction to do these more systematic, holistic, collaborative approaches."

26 **Comment**: D. Olson, USACE: "Landscape scale plans aren't going to work if they aren't embraced by the entities that will implement them and the landowners that are affected by the plan. Many larger scale plans end up on a bookshelf or in a file cabinet and aren't used because of lack of commitment or lack of resources to fully implement the plan. If all the relevant participants are involved from the outset, with agreed upon goals and objectives, then there is greater likelihood of implementing the plan. Trade offs and compromises will be needed to develop a plan that has broad acceptability and buy in from participants."

27 **Comment**: D. Olson, USACE: "Agency leadership needs to provide direction to staff on how to do these newer approaches. The collaboration among agencies can begin when the leaders of the participating agencies, along with other stakeholders, work together to develop an overall approach that will guide staff that do the day to day work that accomplishes the objectives of the collaborative management approach to protecting natural resources and moving forward with development and infrastructure."

Three examples of "scoping" that have been employed in collaboration include: the HCP processes addressing wildlife habitat conservation and development on San Bruno Mountain, North Key Largo (the first key off the Florida mainland) and, efforts to address the conservation of the historic home and workshop of Sam Maloof threatened by the development of the 210 Freeway in Southern California. The scoping process regarding San Bruno Mountain was led by San Mateo County and involved the State and federal wildlife agencies, three cities, the landowner, developers and environmental groups. The North Key Largo process was a somewhat formal process convened pursuant to then Governor Bob Graham's Gubernatorial Executive Order and overseen by his Secretary for Community Affairs, while the Maloof process was very informal a series of meetings among the Maloofs, the City of Rancho Cucamonga and the regional, state and federal agencies convened in the historic residence (with Alfreda Maloof serving lemonade and cookies). At the heart of these "scoping" processes was a structured dialogue, regarding concerns, issues, opportunities and alternatives, together with related considerations. In each case, supporting these effort, there was a foundation of growing empathy and mutual "respect" on the part of those involved.

28 See also the report on Large Landscape Conservation, endnote 7, supra, and the website cited (www.lincolninst.edu/subcenters/regional collaboration) for its discussion of regional collaboration and referenced case studies.

29 See www.spk.usace.army.mil: "CWA 404 Permit Strategy Aligned with South Sacramento Habitat Conservation Plan" (USACE, Sacramento District, December 2015).

30 With respect to the broader context of efforts within DOI, see: Clement, J., et al., A Strategy for Improving the Mitigation Policies and Practices of the Department of Interior, A Report to the Secretary of the Interior from the Energy and Climate Change Task Force (April 2014). ("DOI Mitigation Strategy Repprt").

31 See, USACE Regulatory Guidance Letter 05 09, available at: http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05 09.pdf.

32 CLEANR, Roundtable Reflections on the Natural Community Conservation Planning Experience in Southern California (July 15, 2015).

33 The coordination of varied federal and state efforts regarding habitat conservation is important and often complicated. For example, HCPs may provide for wildlife conservation (species, biological communities, eco systems, etc.) beyond required mitigation to provide for species that are or may be listed under the ESA. In Pima County, Arizona, the Sonoran Desert Conservation Plan is a voluntary plan that provided the basis upon which to build the Pima County HCP. In California, the Natural Communities Conservation Planning (NCCP) Act provides for additional, beyond mitigation, conservation and has a "species recovery standard". In some cases, HCP applicants may provide additional, voluntary conservation and include it as a separate document or as an HCP appendix (e.g., the South Sacramento HCP, California). The latter approach may even go beyond the NCCP requirements (e.g. the Yolo County California Local Conservation Plan is a far reaching voluntary addition to the HCP/NCCP for the area.). These approaches extend beyond traditional HCP permitting with much more extensive, landscape scale, conservation. The resulting complexity deserves attention.

34 http://www.chesapeakebay.net.; See also, Presidential Executive Order establishing a Federal Leaders Committee (https://www.whitehouse.gov/ the press office/executive order chesapeake bay protection and restoration) to oversee the development and coordination of programs and activities and to prepare a Strategy for restoring and protecting Chesapeake Bay, in collaboration with the affected states. See, also: Paeffgen, Matthew, A Ringmaster for the Circus: Using Interstate Compacts to Create a Comprehensive Program to Restore the Chesapeake Bay (37 ELR 10888, 2007 (http://eir.info/sites/default/files/articles/37.10888.pdf).

35 See, http://calwater.ca.gov; http://wwwcalfed; http//deltacouncil.ca.gov; and, http://www.californiawaterfix.com.

36 Water Resources Development Act of 1996, Public Law 104 303 (October 12, 1996). http://www.evergladesrestoration.gov/content/tf.html.

37 http://www.evergladesrestoration.gov/. See, Appendix C.

38 http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html

39 http://www.chesapeakeconservancy.org

40 A CWA Regional General Permit was issued by USACE to the East Contra Costa County HCP/NCCP on May 4, 2012 with a 5 year permit term. The suggestion has been made that the CWA permit might structured to be and "ever green" permit that would automatically be extended at the end of each year for a further year (unless otherwise directed by the USACE prior to the extension).

41 For example, the Sacramento District of the ACOE recently issued its memorandum dated December, 2015, entitled "CWA 404 Permit Strategy Aligned with the South Sacramento Conservation Habitat Plan" suggesting a "streamlined" approach that would align the regional HCP framework and compliance with CWA 401 and 404 (including the 404(b)(1) Guidelines), NEPA and Section 106 of the National Historic Preservation Act, utilizing the HCP as well as a regional general permit, Letters of Permission, and an abbreviated process for issuance of standard permits (if required). In the past, the EPA has been reticent to approve impacts to waters of the United States proposed in regional plans based on general proposed uses and has required specific project by project consideration of whether there were other upland sites that could accommodate the specific use (and thereby "avoid impacts to waters of the United States"). [check with EPA on status of this principle]. See Mara J. Hershman, et al., The Search for Predictability, Technical Report, Washington Sea Grant, Univ. of Washington HG 30 (October, 1980).

42 "PECE": Policy for the Evaluation of Conservation Efforts. https://www.fws.gov/endangered/esa library/pdf/PECE final.pdf. [Texas]

43 Lederman, Wachs, J., Schlotterbeck, M., Sciara, G., Task 4 Report: Funding and Financial Mechanisms to Support Advance Mitigation (Institute of Transportation Studies, UC Davis, January, 2015).

44 https://en.wikipedia.org/wiki/National Urban Policy and New Community Development Act of 1970.

45 Comment: J. Hopkins, California HCP Coalition. "There may be situations where using federal lands for mitigation of private lands impacts is appropriate. But they need to be special circumstances where the federal lands that are protected both have very important biological resources and are not properly protected already."

46 With respect to BLM lands, where, e.g., the relinquishment of a grazing allotment could provide compensatory mitigation, the underlying BLM lands may not.

47 E.g., the DRECP and the Greater Sage Grouse effort have both required massive efforts to map and catalogue potential habitat and preferred development sites. Generally this is done using remote sensing technology followed by on the ground surveys; however, some point out that often landowners will not permit such surveys. **Comment, Wayne Spencer,** Conservation Biology Institute: "Mapping of conservation values (e.g., by DRECP) increasingly use sophisticated computer modeling algorithms, not just remote sensing and field truthing. In fact the field truthing is usually woefully underfunded, so we need to rely on modeled coverages with sometimes unknown uncertainties".

48 **Comment**: D. Olson, USACE: Most of the land (roughly 75%) in the conterminous United States is privately owned. There have been studies demonstrating that private landowners bear most of the burdens for wetland regulation, while the benefits apply to all citizens in the area. It is likely that this benefit/burden concern applies to wildlife habitat and other resources as well.

49 In California, there has been increasing interest (e.g., by the California Strategic Growth Council ("CSGC"), the California Biodiversity Council ("CBC"), The Nature Conservancy and others) in developing at the state wide and regional levels, approaches for the early mapping of eco systems, conservation needs, threats and opportunities ("Green Prints"; see, e.g., J. Thorne, et al., The Nature Conservancy/U.C.Davis, Greenprinting in California, Presentation, 2013) and, advance mitigation funding in connection with future state infrastructure (e.g., for water and energy) Regional Advance Mitigation Planning ("RAMP"; see, https://rampcalifornia.water.ca.gov); These efforts of CSGC and CBC could well explore the state level tiering of planning and regulation, providing a kind of conservation "framework", perhaps such as that reflected in Florida's establishment of "Areas of Critical State Concern" and concepts such as "Developments of Regional Impacts". The role of the HCP concepts of multiple agency/interest collaboration and agreements might well be utilized at various levels of this work, e.g.: information gathering, sharing and management; collaborative efforts and agreements focused on specific areas of greater complexity ("focal areas") calling for more detailed and fine grained planning (taking the form of Area wide MSHCPs).

50 See, e.g., the California Desert Renewable Energy Memorandum of Agreement, http://www.drecp.org/documents.

51 E.g., the Environmental Mitigation Program (EMP) of the San Diego Association of Governments ("SANDAG") is an exceptional, innovative, pioneering effort that provides funds through TransNet, a county wide sales tax program, to protect, preserve, and restore native habitats as offsets to disturbance caused by the construction of regional and local transportation projects. The $850 million program began purchasing property in 2008 and has now acquired approximately 3,600 acres around the region at a cost of $117.8 million. Some of the recent acquisitions

go above and beyond required environmental mitigation and are made possible through savings achieved by buying land early, at lower prices, and in larger parcels. http://www.keepsandiegomoving.com (last visited: September 7, 2015). See also, Greer, K., Habitat Conservation Planning in San Diego County, ENVIRONMENTAL PRACTICE (Sept. 2004).

52 See, e.g., C.R.S. 39 22 522.

53 San Diego, Riverside, and Orange Counties, California, transportation sales tax measures to provide funding for conservation.

54 **Comment**; D. Olson, USACE: "In lieu fee (ILF) programs could be a good way to finance larger scale land acquisition efforts, especially for small impacts. Each permitted impact could be required to pay into the in lieu fee program to compensate for small resource losses, and those fees could be pooled together to acquire larger contiguous tracts of land that have important habitat value for the species of concern. See 33 CFR 332.8 for the Corps' regulations governing in lieu fee programs to provide compensatory mitigation in the CWA section 404 permit program. In lieu fee programs might be a better fit for the approaches discussed than mitigation banks. But in lieu fee programs will need to be properly structured so that they accomplish their mitigation commitments." See. Comment, Hugh Crowell, How Do We Integrate HCPs and ILFs Within Watershed Plans? (ELI, National Wetlands Newsletter, Vol. 34, No. 2, 2012) discussing use of ILFs within Watershed Plans and HCPs: "Management of both Mitigation banks and HCPs increasingly relies on the restoration of degraded or historic aquatic resources; yet, there are no clear or consistently applied methods for determining the functional life and the attendant credit schemes to account for the ecological improvements to the natural environment".

55 See Appendix C.

56 Chapter 2.99 (commencing with Section 53398.50 to Part 1 of Division 1 of Title 5 of the California Government Code. (2014).

57 Transparency and the availability of information is also Important in the development and adoption of an HCP. With our increased ability to gather, store and information, it would be helpful to create a public accessible GIS data storage and sharing site available to the affected agencies and interests, which would include information related to its creation and including, as well, the results of subsequent surveying, monitoring and reporting. EPA is currently in the process of developing such programs.

58 Management Systems International, An Independent Evaluation of the U.S. Fish & Wildlife Service's Habitat Conservation Plan Program (Sept. 2009).

59 Alejandro E. Camacho, Can Regulation Evolve? Lessons from a Study in Maladaptive Management, 55 UCLA L. REV. 293 (2007).

60 Peter Kareiva et al., Nat'l Ctr. For Ecological Analysis & Synthesis Working Group, Using Science in Habitat Conservation Plans 5 (1999).

61 Robert McClure & Lisa Stiffler, Troubled Plans, SEATTLE POST INTELLIGENCER, May 4, 2005, at A12.

62 Jessica Owley, Keeping Track of Conservation, 42 Ecology L.Q. (2015).

63 **Comment**: John Hopkins, National HCP Coalition: HCP implementation must be very transparent and the information accessible to all parties, including the general public. Approved HCPs should have oversight from advisory or other committees that include the various stakeholders. Every few years there should be a review of the HCP to determine if it is working this must be a transparent process that the public can see. If an HCP is not working well enough, then the various parties must work out what to do, agreed upon assurances notwithstanding.

64 FWS HQ ES 2015 0126 (March 18, 2016). See also, Clement, J. et al., A Strategy for Improving the Mitigation Policies and Practices of the Department of Interior, A Report to the Secretary of the Interior from the Energy and Climate Change Task Force (April 2014).

Appendix A: Sessions, Meetings and Participants

SESSION I: FEBRUARY 6-7, 2014, THE FUTURE OF HABITAT CONSERVATION PLANNING.

Host: CLEANR, UCI Law, Irvine

Moderators: Lindell Marsh, CCG, and Alejandro Camacho, CLEANR.

Participants:

Trish Adams, U.S. Fish and Wildlife Service; Michael Allen, U.C. Riverside; Lisa Belenky, Center for Biological Diversity; Therese Bradford, US Army Corps of Engineers; Greg Costello, Wildlands Network; Dan Cox, U.S. Fish and Wildlife Service; Joe Edmiston, Santa Monica Mountain Conservancy; Armand Gonzales, Ca. Dept. Fish & Wildlife; Keith Greer, SANDAG; Jordan Henk, Redlands Institute; John Hopkins, California HCP Coalition; Susan Hori, Manatt, Phelps & Phillips, LLP ; Randy Jackson, The Planning Center; Brenda Johnson, Ca. Dept. Fish & Wildlife; John Kopchik, East Contra Costa Habitat Conservancy; Charles Landry, Western Riverside Regional Conservation Authority; Jeff Opdycke, San Diego Zoo Global; Christy Plumer, The Nature Conservancy; Michael Robinson-Dorn, U.C. Irvine; Ed Sauls, The Sauls Company; Melanie Schlotterbeck, Conservation Clarity; Ken Schreiber, Santa Clara Valley Habitat Plan; Dan Silver, Endangered Habitats League; Sean Skaggs, Ebbin Moser + Skaggs, LLP; James Sulentich, Nature Reserve of Orange County; Greg Vail, Selva Partners; Martin Wachs, U.C.L.A.; Paul Weiland, Nossaman LLP; Jill Yung, Paul Hastings.

Report: CLEANR, Lessons from Area-wide Multi-Agency Habitat Conservation Plans in California.

SMALL GROUP MEETING: AUGUST 8, 2014, THE ROLE OF "PILOTS".

Host: The Sam and Alfreda Maloof Foundation for Art and Craft, Rancho Cucamonga, Ca

Moderator: Lindell Marsh, CCG.

Participants:

Hasan Ikhrata, Executive Director and Ping Change, Southern California Association of Governments. Celeste Cantu, General Manager, Santa Ana Watershed Project Authority; Martin Wachs, PhD., Professor Emeritus and Jaimee Lederman, PhD Candidate, UCLA Lewis Center; Rick Bishop, Executive Director, Western Riverside Council of Governments; Ray Wolfe, Executive Director, San Bernardino Associated Governments; and, Tom Hudson, Director, Land Use Services, County of San Bernardino

Memorandum:

SESSION II: DECEMBER 11, 2014, FINANCE STRUCTURE OF HABITAT CONSERVATION PLANNING AND IMPLEMENTATION.

Host: Downey, Brand, Sacramento, California,

Moderators:

CCG: Lindell Marsh,

CLEANR, UCI Law: Alejandro E.Camacho, Director, Professor; Elizabeth Taylor, Atty.; Melissa Kelly, Atty.

UCLA: Martin Wachs, Professor Emeritus; Jaimee Lederman, Attorney and Ph.D. candidate

California Habitat Conservation Coalition: John Hopkins, Director

Participants:

Trish Adams, USFWS, National HCP Coordinator; David Alladjem, Downey, Brand; Dan Cox, USFW, California/Nevada HCP Coordinator; Manley Fuller, President., Florida Wildlife Federation, representing Florida Conservation Coalition; Alen Glen, Attorney, Sedwick, Texas; Denny Grossman, Senior Advisor, Calif. Strategic Growth Council; Brenda Johnson, HCP Chief, Calif. Dept. of Fish and Wildlife; Jennifer Garrison, Transportation Liaison, Cal. Dept. of Fish and Wildlife; Jennifer Johnson, Dudek Associates; Charlie Landry, Western Riverside Resource Conservation Authority; Monica Parisi, Calif. Dept. of Fish and Wildlife; Kristen Pawling, Southern Calif. Assoc. of Governments; Gian-Claudia Sciara, Professor, Transportation Planning, UC, Davis; Paul Weiland, Nossaman; Melissa Thorme, Downey, Brand; and, Douglas Wheeler, Hogan Lovells; former California Secretary for Resources.

SESSION III: JULY 31, 2015, PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, WASHINGTON, D.C.

Host: Tim Male, CEQ.

Moderators: Tim Male, CEQ, Lindell Marsh, CCG and Alejandro Camacho, CLEANR

Participants:

Timothy Male, Deputy Associate Director for Wildlife, CEQ;Tomer Hasson, DOI, Office of the Secretary; Manisha Patel, CEQ; Elizabeth DePentu, CEQ; Michael Bean, DOI. Chief Deputy Asst. Sec., USFWS; Craig Aubrey, FWS; Trish Adams, FWS, Head of National HCP Office; Bret Birdsong, Assistant Solicitor DOI; Ted Boling, Assistant Solicitor Fish, Wildlife and Parks; Jim Lyons, DOI/Dep.Asst.Sec. Land; Therese Bradford, USBR; Klamath Falls, Ore. (prior: ACOE, USFWS, US Forest Service), USACE; David Olson, Regulatory Manager; James Murley, Executive Director, South Florida Regional Planning Council; Kyle Hathaway, EPA; Palmer Hough, UDDOT; Paul Heberling, Transportation Specialist, Office of the Deputy Secretary for Policy, FHW; Gerald Solomon, Director of Project Development and

Environmental Review, USDOT; Shoshanna Lew, Asst. Sec. for Transportation Policy; Denny Grossman, Office of Planning and Research; California Strategic Growth Council; Lindell Marsh, Center for Collaboration in Governance; Douglas P. Wheeler, Hogan Lovells; Prof. Alejandro Camacho, CLEANR; Prof. Emeritus, Martin Wachs, UCLA; Jaimee Lederman, UCLA PhD Candidate; Elizabeth Taylor, Atty, CLEANR; Melissa Kelly, Atty, CLEANR; Mark Kramer, TNC/California HCP Coalition; Steve Quarles, Nossaman LLC; California Coalition for Habitat Conservation Planning; Jim Pugh, Sheppard Mullin; Ya-Wei Li, Defenders of Wildlife; David Zippin, ICF International; Jim McElfish, Environmental Law Institute (ELI); Kelly Reed, Director of Government Relations, Conservation Fund; Wayne Spencer, Conservation Biology Institute; and, Shannon Eggleston, Director for Environmental Programs and Kate Kurgan, AASHTO.

Ancillary Small Group Meetings, Washington, D.C.: hosted by the Environmental Law Institute; the American Association of State Transportation Officials and the US Department of Transportation, each including participants from from the CEQ session.

ROUNDTABLE: JULY 15, 2015, ROUNDTABLE REFLECTIONS ON THE NATURAL COMMUNITY CONSERVATION PLANNING EXPERIENCE IN SOUTHERN CALIFORNIA.

Host: CLEANR, UCI Law

Moderator: Alejandro Camacho, UCI Law

Participants:

Jim Bartel, U.S. Fish and Wildlife Service (USFWS) (retired); Michael Beck, Endangered Habitats League; Alejandro Camacho, U.C. Irvine; Richard Demerjian, U.C. Irvine; Keith Greer, San Diego Association of Governments; Travis Huxman, U.C. Irvine; Doug Johnson, California Invasive Plant Council; Melissa Kelly, U.C. Irvine; Charles Landry, Western Riverside Regional Conservation Authority; Lindell Marsh, Center for Collaboration in Governance; Monica Parisi, California Department of Fish and Wildlife; Kristine Preston, U.S. Geological Survey; Matthew Rahn, San Diego State University; Jonathan Snyder, USFWS; Jim Sulentich, Nature Reserve of Orange County; Elizabeth Taylor, U.C. Irvine; Rob Thornton, Nossaman LLP; Paul Weiland, Nossaman LLP.

Appendix B: Area-wide MSHCPs Nationwide

TABLE 1.0: LIST OF LARGE-SCALE MSHCPS:

Plan	Primary Covered Activities*	States	Status (Jan 2016)	Size (Ac) (>100,000 ac)
Oregon State Parks Snowy Plover HCP	Recreation	OR	Approved	100,000
AACity of Seattle Cedar River City of Seattle Cedar River HCP	Water Management	WA	Approved	>100,000
Plum Creek Timber HCP	Timber Harvest	WA, ID, MT	Approved	1,690,000
Plum Creek Native Fish HCP	Timber Harvest	Same?	Approved	710,000
Washington Forest Practices HCP	Timber Harvest	WA	Approved	9,300,000
Washington DNR Aquatic Lands HCP	Water Management	WA	Approved	2,600,000
Sonoran Desert Conservation Plan	Urban Development	AZ	In Process	
Pima County MSCP	Urban Development	AZ	In Process	5,900,000
Lower Colorado Multi Species Conservation Plan	Water Management	CA, AZ, NV	Approved	717,000
Clark County MSCP	Urban Development	NV	Approved	5,000,000
Lincoln County HCP	Urban Development	NV	Approved	1,780,000
Washington County HCP	Urban Development	UT	Approved	135,000
Iron County Prairie Dog HCP	Urban Development	UT	Approved	280,960
Mendocino Redwood Company HCP/NCCP	Timber Harvest	CA	In Process	213,240
Yuba/Sutter County HCP/NCCP	Urban Development	CA	In Process	469,271
Placer County Conservation Plan	Urban Development	CA	In Process	275,000
South Sacramento County HCP	Urban Development	CA	In Process	374,000
Solano County HCP	Urban Development	CA	In Process	580,000
East Contra Costa County HCP/NCCP	Urban Development	CA	Approved	175,000
San Joaquin County HCP	Urban Development	CA	Approved	800,000
Santa Clara Valley Habitat Plan	Urban Development	CA	Approved	525,000
Butte Regional Conservation Plan	Urban Development	CA	In Process	564,270
Metro Bakersfield HCP	Urban Development	CA	Approved	262,000
Western Riverside County MSHCP	Urban Development	CA	Approved	1,300,000
Coachella Valley MSHCP	Urban Development	CA	Approved	1,200,000
Southern Orange County HCP	Urban Development	CA	Approved	132,000
San Diego North County MSCP	Urban Development	CA	In Process	345,544
North San Diego MHCP	Urban Development	CA	Approved	<100,000
South San Diego MSCP	Urban Development	CA	Approved	500,000
Yolo County HCP/NCCP	Urban Development	CA	In Process	653,549
San Luis Obispo County HCP/NCCP	Urban Development	CA	In Process	
Humboldt Redwood Company HCP	Timber Harvest	CA	Approved	211,700
Massachussets Beaches HCP	Recreation	MA	In Process	150,000
Pennsylvania State Forest Lands HCP	Timber Harvest	PA	In Process	3,800,000
Midwest Wind Energy HCP	Renewable Energy	8 states	In Process	294,800,000
Great Plains Wind Energy HCP	Renewable Energy	9 states	In Process	268,000,000

Plan	Primary Covered Activities*	States	Status (Jan 2016)	Size (Ac) (>100,000 ac)
Edwards Aquifer HCP	Water Management	TX	Approved	10,758,976
Southern Edwards Plateau HCP	Urban Development	TX	Approved	3,621,699
Williamson County HCP	Urban Development	TX	Approved	726,000
Hays County HCP	Urban Development	TX	Approved	444,000
Balcones Canyonlands Conservation Plan	Urban Development	TX	Approved	633,000
NiSource HCP	Gas and Electric Utilities	14 states	Approved	9,000,000
Pacific Gas & Electric San Joaquin Valley O&M HCP	Gas and Electric Utilities	CA	Approved	276,000
Pacific Gas & Electric Bay Area O&M HCP	Gas and Electric Utilities	CA	In Process	896,000
San Diego Gas & Electric HCP/NCCP	Gas and Electric Utilities	CA	Approved	992,000
Salt River HCP	Water Management	AZ	Approved	<100,000
International Paper HCP	Timber Harvest	AL	Approved	<100,000
State of Georgia Red Cockaded Woodpecker HCP	Timber Harvest	GA	Approved	10,900,000
Florida Beaches HCP	Urban Development	FL	In Process	<100,000
Douglas County HCP	Urban Development	CO	Approved	<100,000
ESA Oil&Gas Coalition HCP	Oil & Gas Development	PA, WV, OH	In Process	25,000,000
American Burying Beetle Oil & Gas Industry Conservation Plan (GCP)	Oil & Gas Development	OK	Approved	22,000,000
Lost Pines HCP	Urban Development	TX	Approved	126,000
Alabama Beach Mouse GCP	Urban Development	AL	Approved	<100,000
Florida Scrub Jay GCP	Urban Development	FL	Approved	<100,000
Karner Blue Butterfly State HCP	Timber Harvest	WI	Approved	7,000,000
Cave Dwelling Bat Forest HCP	Timber Harvest	MI, MI, WI	In Process	
AEP American Burying Beetle HCP	Gas and Electric Utilities	OK, AR, TX	In Process	>100,000
Oncor Utility HCP	Gas and Electric Utilities	TX	Approved	>100,000
Kauai Electric HCP	Gas and Electric Utilities	HI	In Process	350,000
Malpai Borderlands HCP	Rangeland Management	AZ, NM	Approved	500,000 (Arizona), 300,000 (New Mexico)
San Luis Valley HCP	Water Management	CO	Approved	2,000,000
Douglas County HCP	Urban Development	Washington	In Process	2,000,000
Bakersfield Habitat Conservation Plan	Urban Development	CA	In process	2,500,000
Washington DNR Forest Lands HCP	Land Management	WA	Approved	1,600,000
Weyerhaeuser Millicoma Tree Farm HCP	Land Management	OR	Approved	206,000
Bastrop Utilities HCP	Gas and Electric Utilities	TX	Approved	142,256
Comal County RHCP	Urban Development	TX	Approved	326,000
Plum Creek Timber Company HCP	Timber Harvest	LA, AR	Approved	261,000
Potlatch HCP	Timber Harvest	AR	Approved	233,000
Mona Department of Natural Resources and Conservation Lands HCP	Timber Harvest	MT	Approved	560,000
Orange County HCP Central/Coastal	Urban Development	CA	Approved	208,000
San Diego Gas and Electric Quino Checkerspot Butterfly Low Effect HCP	Utility	CA	Approved	208,000

Appendix C: Florida Case Study Summary Overview

South Florida is an integrated blend of land, air and water, with: an elevation ranging to only 14 feet above sea-level at Lake Okeechobee; among the highest levels of bio-diversity in the nation; and, the only ecosystem to support subtropical ecological communities in the continental United States. All particularly vulnerable to changes in humidity, temperature, and precipitation. It is susceptible to hurricanes, floods, and droughts as well as severe growth pressures (the State grew from 2.7 million in 1950 to now about 20 million), and, especially, climate change. As a result, these challenges have resulted in programs, communities and relationships of local, State and federal agencies that provide a valuable case study with respect to habitat conservation planning.

Starting in the mid 1960's, South Florida experienced saltwater intrusion that threatened fresh-water supplies, muck fires, destruction of wetlands, the extensive pollution of almost every river, stream, and water body located in the peninsula, and extensive damage to beaches and dune systems. In response, the state focused on managing the sensitive balance between major population growth, the conservation of natural habitat, and the management of surface water resources. Florida responded with regional conservation efforts, legislation and programs that both mandated comprehensive growth management and provided funding for conservation land acquisition.

The response was at the forefront, nationally, of innovation, embracing ideas (e.g., "Development of Regional Impact" and "Areas of Critical State Concern") that were being developed in connection with the then evolving American Law Institute's Model Land Development Code (and finally adopted in 1976). (Mandelker, D., Fred Bosselman's Legacy to Land Use Reform (Journal of Land Use and Environmental Law, p. 11, 17:1, Fall , 2001). Four key pieces of State legislation followed (with significant support from then State Senator Bob Graham, subsequently Governor and United States Senator, and Professor John DeGrove, his mentor (See generally, Powell, David L., Growth Management: Florida's Past as Prologue for the Future, Fla. St. UL Rev. 28 (2000) and Farr, James and Brock, Greg, Florida's Landmark Programs for Conservation and Recreation Land Acquisition (Kentucky Institute for Environmental and Sustainable Development, University of Louisville, Sustain, 14(2006):

- ***Environmental Land and Water Management Act*** (Chapter 380, Florida Statutes, 1972): providing for the management of environmental concerns with respect to lands and waters of the state, including provisions for the establishment of Areas of Critical State Concern and the Development of Regional Impacts.
    - **"Areas of Critical State Concern":** The state was authorized to designate Areas of Critical State Concern to limit local land use authority. The Florida Supreme Court ruled that this was an unconstitutional delegation to the executive branch, but subsequent State legislation addressed this concern. Local agencies were given six months to develop regulations to protect state-regional interests. Initially limited to a 500,000 total designation area, it was later expanded to 1.8 million acres, an amount equal to 5% of the total land area of the state. The state's first areas of critical statewide concern were Big Cypress Swamp in southwest Florida, Green Swamp in central Florida, and the Florida Keys.
    - **"Development of Regional Impacts (DRIs)":** Empowered Regional Planning Agencies to develop regional plans, for the State to develop a State level plan, and for local governments and Regional Planning Agencies to prepare plans consistent with State policies and programs and to provide for consistency and functional implementation programs. The DRI process, through subsequent expansive legislation, resulted in a powerful tool to assure that developers complied with local, regional, and state development directives. The Development of Regional Impact process was effectively repealed by the 2015 Legislature. Vested rights in formerly approved DRIs were preserved, but developers of large scale projects are no longer required to go through the DRI process. Currently, a "Sector Plan" process exists under Florida Statutes 163.3245,

Florida Statutes for development projects with a land area of 15,000 acres or greater. This process is optional for landowners and developers.

- ***Water Resources Act (Chapter 373, Florida Statutes, 1972):*** established a regional water management and regulatory program based on watersheds with five water management districts ("WMDs") governed by citizen boards appointed by the Governor. Once considered the foremost water management program in the Nation, in 2011 the strength of WMD's was dramatically diminished by budget and staff reductions, and close oversight and supervision by the Governor's Office and Department of Environmental Affairs.

- ***Land Conservation Act (Chapter 259, Florida Statutes, 1972):*** One of the nation's most extensive public lands acquisition programs for the conservation of certain lands, this act includes a provision for funding by the authorization to issue bonds, known as the Environmental Endangered Lands ("EEL") program. A statewide vote authorized an initial bond issuance of $200 million for the acquisition of environmentally sensitive lands, and $40 million in recreation bonds, all to be repaid from the proceeds of a documentary stamp tax on real estate transactions.

- ***Conservation and Recreation Lands Program (CARL) (1979):*** Replaced and expanded the EEL program, centered on a recurring revenue stream placed into a dedicated trust. Until 1987 it received funds from an excise tax on mineral extraction. From 1987 through 1990, it also received funds from documentary stamp taxes on real estate transactions, similar to EEL. From 1979 through 1990, the CARL Program protected approximately 181,000 acres of conservation and recreation lands at a cost of nearly $356 million.

- ***Save Our Coast and Save Our Rivers (1981):*** At the urging of the Governor Bob Graham to expand the State's ability to acquire conservation lands, it authorized a bond issue of $275 million to purchase land along the coast, re-paid by proceeds from a documentary stamp tax on real estate transactions that were dedicated to the Land Acquisition Trust Fund ("LATF"; established in 1963, but funded commencing in 1981). This program resulted in the purchase of over 73 miles of coastline and an increase in state park access to the coast. Under the Save Our Rivers program, the legislature created the Water Management Lands Trust Fund and authorized funding from a real estate documentary stamp tax. Funds were distributed to the five Water Management Districts on the basis of relative population. At present, it has been used to purchase over 1.7 million acres of land held and managed by the water districts, including much of the Everglades.

Additional legislation followed:

- ***State Comprehensive Planning Act (Chapter 23, Florida Statutes, 1984):*** Drafted in 1972 but adopted in 1985 as Chapter 187 of the Florida Statutes, this mandate sets the foundation for growth management planning and provides a clear framework for regional and local land use within a state growth plan. Within the 1986 Glitch Bill (SB 978, Chapter 86-191), it set out to solidify the development, review, and consistency of local, state, and regional plans. "Concurrency" of development and infrastructure was provided for and required that development be accompanied by a finding that current adequate infrastructure is to be in place to service the new development. While not directly a conservation provision, it evidenced the State's focus on comprehensive approaches and suggested a mechanism that has replicated (e.g., in California with respect to a similar water supply concurrency requirement).

- ***Preservation 2000 (1991):*** In response to population growth pressures and rising land prices, coupled with less than ideal acquisition rates, the Commission on the Future of Florida's Environment estimated a need for $5 billion for targeted acquisition. In response, the legislature passed Preservation 2000. Despite recession era belt tightening, Preservation 2000 received funding due to strong voter support of environmental programs. Rather than relying upon a year-to-year collection of revenue from the documentary stamp tax, Preservation 2000 relied upon selling long-term bonds to fund land acquisition. From 1991 to 2000, $3 billion in bonds were sold. Funds went towards the acquisition of outdoor recreation and conservation land. The Florida Communities Trust (FCT) program under the Growth Management Act of 1985 was used for this purpose, receiving funding to assist local governments in the implementation of the conservation, open space, recreation, and coastal elements of the comprehensive plan and CARL and Save our Rivers received additional funding. Preservation 2000 successfully preserved nearly 150,000 acres of land.

- ***Forever Florida (1999):*** created by the State legislature in 1999 to succeed Preservation 2000, authorized the issuance of not more than $3 billion in bonds for land acquisition, water resource development projects, the preservation and restoration of open space and greenways, and for outdoor recreation purposes. The funding was distributed by the Florida Department of Environmental Protection to various state agencies for land acquisition. It is the largest public lands acquisition of its kind in the United States, and as of 2001 had funded the acquisition of over 700,000 acres of land at a cost of $2.89 billion. (http://www.dep.state.fl.us/lands/fl forever.htm)

- ***The South Florida Eco-system Restoration Program:*** In 1983 Governor Graham established the Save Our Everglades ("SOE") Program with the goal of protecting and restoring the Everglades. The Everglades Coalition, consisting of national and state conservation organizations was established in 1984 to assist Florida in implementing the SOE. This effort involved the federal government and in 1992 Congress authorized the review study of the Central and Southern Florida Project by the Corps of Engineers which was completed in 1998. The restudy is the basis of the 1999 Comprehensive Everglades Restoration Plan ("CERP") which is today's Everglades restoration plan. The Governor's Commission for a Sustainable South Florida, appointed by Governor Chiles in 1994 worked closely with the Corps and made substantial recommendations that became a part of CERP. Also, in 1993 Secretary of the Interior Babbitt established a federal task force that was formally established by Congress in 1996 for the purpose of consulting with and providing recommendation to the Corps' review study and CERP. The Corps and South Florida Water Management District, local sponsor of the South Florida Project (the object of the review study and CERP), have the principle responsibilities for implementing CERP. Original estimates were that CERP would cost $8 billion and be completed in 2039, with the federal government and Florida splitting the cost 50/50.

- ***Constitutional Amendment:*** In 2014 voters enacted a constitutional amendment attempting to establish a constitutional requirement for continuation of state environmental land acquisition efforts. Known as "Amendment 1" and the "Water and Land Legacy Amendment", the ballot title read: "Water and Land Conservation - Dedicates funds to acquire and restore Florida conservation and recreation lands". The effect of the amendment was to dedicate 33% of the documentary stamp tax on deeds, mortgages and similar recorded instruments to environmental land purchases and management. Since approval of this amendment by more than 75% of the electorate voting in the 2014 general election, the implementation of this amendment has been frustrated by resistance in the Legislature. The Legislature has attempted to nullify the amendment by diverting most of the revenues (over $800 million annually) to paying for ongoing operations and salaries in several state agencies rather than land acquisition. Several lawsuits against the Legislature and the state are now pending in attempt to enforce the letter and intent of the Constitutional amendment.

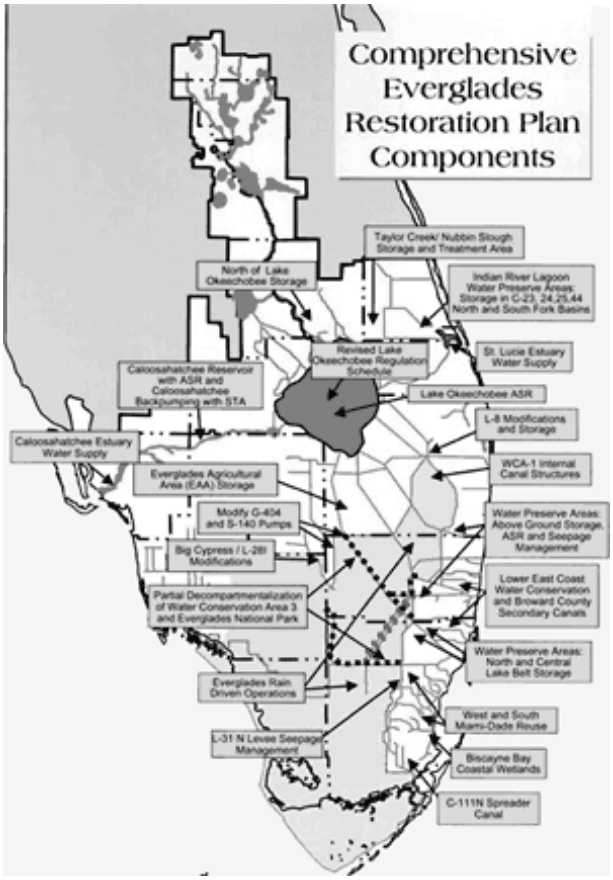
The Role of the HCPs

From the early State legislation of the 1970's, a major focus of the State in addressing conservation has been on both the regulation of Areas of Critical State Concern (such as the Florida Keys) and Development of Regional Impacts coupled with an aggressive program of State-funded land and water-related acquisitions. However, in 1983 under a Gubernatorial Executive Order, then Governor Graham, authorized a collaborative effort to develop an HCP for North Key Largo, the twelve mile key, immediately off the Florida mainland. The Department of Community of Affairs, with DeGrove as Director, was directed to oversee an open collaborative process to develop an HCP by the constituency of affected agencies and interests, included, among others, the major landowners, National and Florida Audubon Societies, the County of Munroe, State and federal agencies. At the end of a two year research and scoping process (looking at concerns, issues, impacts and alternatives), the group came up with two major alternatives that were generally acceptable: total conservation (buy out the landowners) or clustered developed around the four navigable access points on the key, with the development areas to buy-out the remainder and conserve the remaining habitat). The result was that the entire undeveloped portion of the Key was acquired and conserved by the State. Significantly, this collaborative process provided the seeds for the Eastward Ho!/Everglades restoration effort that, in turn, led to the South Florida Eco-System Restoration Program (led in large-part by DeGrove and Graham).

With that major South Florida program underway under the collaboration of State and federal agencies, other formal HCP efforts within the State tended to focus on small individual projects and County-wide HCPs focused on the Scrub-Jay and Beach Mouse (but covering other listed and non-listed species as well).

Comment: P. Adams, USFWS: The 2004/2005 hurricane season put a spot-light on the State's vulnerability under the ESA for their permitting activities associated with the Coastal Construction Control Line program which authorizes coastal construction (private and commercial development), seawalls, dune restoration, etc. Since they occur above MHW, there is no Federal nexus. After threat of litigation by an NGO for non-compliance with the ESA, the State began the ITP process and received HCP Assistance Grants from the Service for the last 8-9 years. The statewide HCP process began around 2005-6 and is the largest HCP in Florida. However, due to lack of support from the state legislature and administration, the effort is floundering and may be abandoned. It is an accurate statement that the Service currently handles ITPs on a project- by-project basis; however, not all of them are small, such as the East Collier Multi-species HCP for Florida panther currently in draft. And ITPs for Charlotte and Walton Counties (check) have been recently issued and the state-wide Florida Beaches HCP is active.

Period of Change



By 2010, the Florida story was changing. It has been reported by conservation interests that State conservation efforts have been significantly curtailed. (Comments by Charles Lee, National Audubon, 2015, generally, as follows): The Department of Community Affairs has been abolished. A small vestige of the duties of DCA has been transferred to the Department of Economic Opportunity. While there is a shell structure suggesting review of local government plans still in the statutes, it is basically nonfunctional under that agency. The Regional Planning Councils have not received State funding for three years and local and regional funding sources are strained. The Forever Florida program remains in the statutes as a framework, but has not been significantly funded in three years. Last year (2014), the Department of Environmental Protection initiated a "land surplus program" which has targeted conservation parcels around the state for declaration of surplus and sale. A number of tracts in the northern Florida Keys were placed on the surplus list. The surplus program is now stalled, but there is still pressure to "sell all unneeded land". The funding of Water Management Districts has been reduced and budgets cut, accompanied by tax rollbacks ordered by the Governor and Legislature. The staffs of some of the districts have shrunk significantly. The districts are functioning on "reserve funds". There are suggestions of walking away from the remaining features of Everglades Restoration. The "Comprehensive Everglades Planning Process" which was initiated to formulate definitive plans to restore flow through the central Everglades by reconnecting the River of Grass by taking down levees and filling canals is meeting significant resistance from agricultural interests.

Significantly, shortly after 2010, the Peninsular Florida LCC was established, providing a place for collaboration among local, State and federal agencies and interests focused on wildlife conservation in and adjacent to Florida (see the broader discussion of LCCs p. ,supra.). Further, former Governor Bob Graham, responsible for much of Florida's landmark conservation efforts, provided leadership in the formation of the Florida Conservation Coalition of environmental groups and others to protect Florida water quality. The Coalition supported the adoption of the Water and Land Conservation amendment to the State Constitution described above to dedicate funding for conservation, management, and restoration of water and land resources. The amendment will provide more than $10 billion for water and land conservation in Florida without any tax increase.

Appendix D: The Role of Science and Mapping

Comments by James R. Strittholt, President, Conservation Biology Institute.

Effective HCPs rely on high-quality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent. Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult. Four major problems have plagued efficient and effective use of these resources including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data sharing and collaboration platform that was developed by the Conservation Biology Institute to address the four major barriers listed above. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing. Users can explore and easily integrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace where they can save all of their content and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs; the most noteworthy being the Desert Renewable Energy Conservation Plan (DRECP) in southern California. This effort, which included the creation of a customized Data Basin "gateway" focused on this geography (www.drecp.databasin.org), resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models. Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process. Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them. As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs such as climate change. Users need more complex topics presented in an easy-to-use application that allows flexible interaction with the content yielding meaningful, actionable results (e.g., California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allows for the incorporation of data through routine field surveys collected by ground crews as well as data from

instrumentation from various types of sensors (e.g., water quality sensors and acoustic sensors for bats and birds). Keeping the data and information up-to-date is critical to a successful HCP and having a durable system to house it all is fundamental.

Without disrupting existing data managing institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management all in a cost effective manner.

Appendix E: Do Habitat Conservation Plans Deserve Wider Implementation?

THE DEBATE

AN EXCERT FROM THE ENVIRONMENTAL FORUM

The first Habitat Conservation Plan under the Endangered Species Act was approved in 1983. It sought to reconcile and manage the conservation of wildlife habitat of over 50 species (including some listed or proposed for listing as threatened or endangered under the ESA) and anticipated development within the 3,000-acre San Bruno Mountain ecosystem south of San Francisco. The effort was a pioneering, collaborative approach relying on two elements: an area-wide geographic plan, jointly developed and implemented by the affected agencies and interests, and a resulting enforceable implementation agreement, providing the basis for public agency approvals and permits. The congressional conference report accompanying the 1982 reauthorization of the ESA stated that the "the San Bruno Mountain Plan is the model" for providing a basis for "incidental take permits" under Section 10 of the ESA, as well as providing a platform for compliance with the regulations of other participating federal, state, and local agencies. For the private sector, it offered predictability and assurances that compatible development could proceed. For environmentalists, it provided greater certainty that species would recover. There are now more than 700 HCPs nationwide, with additional plans in preparation. While a number of HCPs have been based on a more conventional model of bilateral, single-project permits that merely seek to mitigate harm to listed species, the more noteworthy HCPs are landscape-wide and focused on multiple species. These plans each cover hundreds if not millions of acres (with one plan covering an entire state), including urban areas (in California, Texas, and Florida), timberlands (the Pacific Northwest), interstate utility lines and fly-ways (the Midwest and East), energy projects (22.5 million acres in the California desert) and major riparian ways (the Colorado River). As this concept matures, it is outgrowing the adhoc way in which plans have been crafted, funded, and managed. The question is how can this areawide, collaborative HCP concept be improved and implemented to more expeditiously and effectively provide for habitat conservation in concert with needed infrastructure and development?

Alejandro E. Camacho
Professor
University of California (Irvine)
School of Law

VISIONARY BUT FLAWED PROGRAM NEEDS TO EVOLVE

BY ALEJANDRO E. CAMACHO

The Habitat Conservation Plan program has fundamentally changed wildlife management in the United States. The active promotion and proliferation of HCPs may even have saved the Endangered Species Act from repeal by an often hostile Congress.

Many prominent HCPs were innovative experiments in regional governance, seeking to manage the development and conservation of ecosystems across various jurisdictions. Many were formed collaboratively with active participation from a range of interests, at times avoiding the prolonged conflicts over resource use for which the act had often been criticized. A few HCPs even made significant innovations in adaptive management, promoting active monitoring and adjustment over time to account for new information or changed circumstances.

Even so, a number of deficiencies in the program have consistently been given insufficient attention and resources by government authorities and proponents of HCPs, despite how essential these features are to the program's effectiveness. First, key decisions by the Services deem the active participation in planning and implementation of interested parties to be at the option of the applicant. Unsurprisingly, though, a few HCPs — typically larger-scale, with government agency applicants — may be promising examples of the potential of collaborative regulation, for many HCPs interested stakeholders were relegated to a narrow and late role, after the Services and the developer-applicant have negotiated the vast majority of the plan. As such, many HCPs are merely bilateral agreements authorizing the take of important habitat and species.

Furthermore, though monitoring and sufficient funding for implementation are both required under the ESA, they have been systematically neglected. The HCP program relies heavily on permittees to be the principal monitor of the effect of the approved take and the effectiveness of adopted conservation measures, on the premise that permittees have both the incentive and ability to assess conformity with public goals. Sadly, studies show monitoring has been woefully inadequate.

Moreover, though HCPs are regularly adopted under conditions of significant uncertainty, subsequent adjustment of implementation strategies to integrate new information or changed circumstances is rare. The Services have repeatedly acknowledged that adaptive management and contingency planning are valuable, but empirical evidence shows a disinclination to their implementation. Regrettably, recent reviews by the Ecological Society of America and Defenders of Wildlife confirm that weak monitoring and adaptive management are mirrored in the ESA's interagency consultation and endangered species recovery programs.

The trend toward landscape-scale plans is laudable, as there are potentially significant economic and conservation advantages to expanding the scale, species coverage, and duration of HCPs. Yet the increases in complexity and uncertainty from doing so are also considerable and undervalued. A successful HCP program must ensure sufficient resources and incentives for regulators and applicants to promote meaningful participation, monitoring, and adaptive management, including the integration of interested parties in information generation and

implementation. Investment in strategies that promote learning, as well as advanced mitigation, can also reduce uncertainty.

The program's flaws are especially alarming in light of the most significant issue likely to shape the future of habitat conservation: promoting long-term ecological health despite the potentially overwhelming effects of climate change. Because existing HCPs were not designed (and thus do not seek) to account for climate change, they are premised on faulty projections and subject to significantly more uncertainty than projected when approved.

Climate change thus necessitates an intensified commitment by the Services to forecast and manage unforeseen circumstances under theseplans — notwithstanding the limited resources historically dedicated to doing so. Future HCPs must be required to more thoroughly anticipate changing conditions and share the burden of managing such change. The consequences of not doing so will be experienced for decades in light of the horizon for many large HCPs.

Moreover, adapting place-based habitat conservation to ecological change will require large-scale planning that promotes linkages between conservation areas and integrates more dynamic and active conservation measures, such as assisted migration. Even so, a changing climate might ultimately require a fundamental reconsideration of the goals of the HCP program, which have been primarily premised on promoting or restoring species where they have historically occurred. Under the existing ESA, it is unclear how managers will be able to reconcile native and endangered species preservation when these will increasingly be incompatible in changing climatic conditions. More fundamentally, scientists and policymakers — and crucially the public — will ultimately have to grapple with profound questions about what long-term ecological health means, how to best foster it, and who should decide.

Alejandro E. Camacho *is a professor of law and Director of the Center for Land, Environment, and Natural Resources at the University of California, Irvine, School of Law, and a member scholar with the Center for Progressive Re*form.

AN ALL LANDS, ALL HANDS APPROACH

BY JIM LYONS

Nearly 500 million acres of federally administered public lands are managed by the Bureau of Land Management and Forest Service for multiple use and sustained yield. This mandate is particularly challenging to apply. Yet, less well understood is the critical role that federal lands can play in species conservation by anchoring conservation strategies that permit state and private lands to be managed in accordance with less restrictive management measures.

We saw this play out in efforts to protect the Northern Spotted Owl from extinction on forest lands in the Pacific Northwest in the early 1990s and, more recently, in the debate over conservation of the Greater sage grouse across 10 western states.

What is most interesting about these two issues — separated by decades — is how they reflect the evolution of conservation, our growing appreciation for the concept of landscape-level management, and the value of coordination and

Jim Lyons
Deputy Assistant Secretary, Land and Minerals Management
Department of the Interior

collaboration across land ownership and management types. Less appreciated is the important role that federal lands can play in providing private landowners and public land users with greater certainty in meeting economic development goals.

For the spotted owl, the commitment to protect areas of old-growth federal forests (administered by the Forest Service and BLM) from timber harvest benefitted the owl and, as key watersheds, the conservation of various salmonids. The commitment of these biologically rich public lands primarily to habitat protection enabled the Fish and Wildlife Service to develop Habitat Conservation Plans with private and state interests. This permitted greater flexibility in the management of private industrial, non-industrial, and state-administered forests to benefit commerce and meet government trust responsibilities through the development of HCPs.

A similar strategy was adopted to convince the FWS that listing of the Greater sage grouse as threatened or endangered was "not warranted," as the Service determined in September 2015. Research and analysis had demonstrated that while the most important habitat areas for the grouse are scattered across public and private lands, more than half of the remaining sage grouse habitat is on BLM- and Forest Service-administered lands. The vast majority of the remaining lands essential to the bird's survival are privately owned or administered by the states.

Conservation of the grouse and 350-plus other species also associated with the sagebrush ecosystem relies heavily on the protection and restoration of rangeland habitat on public lands as well as the adoption of conservation measures recommended by scientists, wildlife biologists, and resource managers incorporated in new resource management plans. In addition, the Natural Resources Conservation Service, through its Sage Grouse Initiative, provided financial and technical support to implement conservation practices on private lands across the species' range.

To prevent the loss of sagebrush habitat due to rangeland fire — the primary threat to the sage grouse in the Great Basin — states and local interests, private landowners, and federal agencies worked together to develop a science-based, integrated strategy to prevent, suppress, and restore fire-impacted landscapes. Areas of high resistance to fire and climate change were identified and prioritized to improve the efficiency and efficacy of the strategy.

Coordination among federal agencies and collaboration with local, state, and private interests is essential to development and implementation of this conservation strategy. A federal policy team and a state-federal Sage Grouse Task Force provided continued dialogue and collaboration in developing conservation strategies across public and private lands.

This "all lands, all hands" approach to habitat management across the remaining range of the sage grouse permitted greater protection for the bird on federally administered public lands and affords states and private landowners greater flexibility in managing the remaining 40 percent of sage grouse habitat under their care. While the "not warranted" determination provides certainty against "take," since the species is not listed, development of Candidate Conservation Agreements with Assurances on private lands and Candidate Conservation Agreements for federal rangeland permits provides added certainty that should listing be warranted in the future, continued application of the conservation

measures adopted as a part of these plans should allow continued use of these lands without concern for take.

Conservation has advanced in the past three decades as new concepts, tools, and technologies have been developed and applied to strategies to conserve the earth's biodiversity and prevent the listing of threatened and endangered species. The evolution of the concept of landscape-scale conservation; improved application of science and research; use of new technologies, such as modelling and Geographical Information Systems, to improve analysis and understanding of policy options; and greater emphasis on collaboration for bringing stakeholders together have revolutionized efforts to understand and address species and ecosystem needs. Nowhere are these changes more apparent and useful than in managing wide-ranging species on public and private lands.

Jim Lyons *is deputy assistant secretary for lands and minerals management in the Department of the Interior and a lecturer and research scholar at the Yale School of Forestry and Environmental Studies.*

THE FLAPPING OF BUTTERFLY WINGS — 36 YEARS LATER

BY LINDELL MARSH

Lindell Marsh
President
Center for Collaboration in Governance

Thirty six years ago, faced with the proposed listing of the Callippe Silverspot butterfly as endangered under the federal Endangered Species Act, with no take permit available, my client, Visitacion Associates (Sherm Eubanks), in a brief letter, proposed to the Fish and Wildlife Service the preparation of a "Habitat Conservation Plan" covering its domain: the 3,000-acre San Bruno Mountain area, south of San Francisco.

Sherm described the HCP as "a positive management and conservation program approach that will effectively demonstrate the ability of concerned governmental agencies on all levels, as well as other interests, to work together to reconcile the many conflicting interests and concerns, provide guidance as to how these concerns can be included in future planning for similar areas, and assist us to reconcile wildlife considerations with economic and other relevant impacts."

Initially, FWS Director Lynn Greenwalt said no ("the Service doesn't do HCPs") but then agreed to explore it. Little more than two and a half years later, Tom Reid had completed a peer-reviewed study of the plan; Congress had added Section 10(a) to the ESA providing a needed incidental take permit; and together, San Mateo County, three cities, California Fish & Game, FWS (Don Barry), Visitacion, Save San Bruno Mountain Committee (Tom Adams), and I, and my associates Rob Thornton and Susan Hori, saw the environmental assessment and implementation agreement approved and the incidental take permit issued.

Today, there are some 700 HCPs completed or in process, covering millions of acres. But times have dramatically changed. It's time for a more robust programmatic approach to Habitat Conservation Planning.

Today, information is gathered, managed, and shared across the nation (and worldwide), instantaneously, up and down our silo-like institutional hierarchies and across their boundaries — facilitating collaboration. In the same time, our population has grown by almost 100 million. Sustainability is an increasing concern: climate change, air, water, food, and biodiversity; the loss of nature preoccupies us. The principles underlying HCPs are now more relevant than ever — a collaborative approach among agencies and interests, to reconcile human impacts and biodiversity, in the context of sustainability. It's that simple. The question now confronts us: "How best"?

We need to learn from the past, not only from HCPs, but also from earlier national and state efforts: e.g., the proposed national land use policy legislation explored by President Nixon and Senator Henry Jackson (D-WA); the work of Fred Bosselman and the American Law Institute, reflected in Florida statutes; collaborative state/federal efforts with respect to special areas of national concern, such as the Chesapeake Bay watershed and the South Florida Ecosystem Restoration Plan and Task Force; the California Bay-Delta efforts; efforts regarding the deserts of the Southwest (e.g., the Desert Renewable Energy Conservation Plan); and, the recent Sage Grouse Plans.

Moving forward: The HCP experience has been largely ad hoc and focused on regulatory compliance for a specific geographic area. However, the HCP concept is potentially much broader and more "programmatic," including elements focused not only on regulatory compliance but on the formation of frameworks (e.g., by agreements of federal and state agencies and possibly others that address habitat conservation broadly and provide a conservation frame, contemplating, perhaps, multiple subsidiary HCPs and participants). These frameworks could address early and broad scientific ecosystem research and surveys; landscape-level acquisition and conservation in anticipation and advance of infrastructure and development (while ecosystems are intact and the cost is low); and, funding and financing approaches, e.g., similar to past programs for New Towns or in parallel with infrastructure funding, including advance mitigation, credits, and mitigation banks.

In developing such frameworks, we should consider the workings of recently authorized State Water Plans and Landscape Conservation Cooperatives, as well as other efforts such as the Sustainable Communities Partnership (among EPA, Interior, and the Department of Transportation), the Eco-Logical program (DOT and FWS), and the Sage Grouse Plans.

In thinking about the future of Habitat Conservation Planning and these frameworks, the key element is "collaboration." It is based on planning theory, not conflict-resolution, calling for mutual respect among those involved, plus truthfulness, dialogue, and civility. In turn, the centerpiece of the process is scoping, including the collaborative identification of concerns, opportunities, and considerations, scientific research, and the exploration of alternatives. Finally, leadership — not commandand- control oversight, but, rather, bringing to bear a sort of wisdom, an appreciation of the mandate of each participant, together with a sense of compassion and interest in the mandates and concerns of them all.

Collaboration and innovation — we can and should continue to embrace the spirit expressed in Sherm's letter of thirty-six years ago.

Lindell Marsh *is president of the Center for Collaboration in Governance and a practicing attorney at law.*

INCORPORATING RELEVANT LAWS INTO PLANNING

BY T. O'ROURKE BRADFORD

Therese O'Rourke Bradford
Area Manager
Bureau of Reclamation

Habitat conservation planning efforts range from simple single-species plans with one jurisdiction to multiple species HCPs across many jurisdictions. The more complex the plan and the more numerous the jurisdictions, the more complex are the issues for species, tradeoffs between species, jurisdictional alignments, and politics.

Usually, when a jurisdiction completes an HCP, it assumes that federal permitting is complete. When the HCP is part of a state effort, such as in California's Natural Communities Conservation Plan, the expectation includes state permits. In California, jurisdictions usually receive both an HCP and NCCP. These efforts take years and cost millions of dollars.

How, and why, should an already complicated process be expanded to include the other processes and laws? Failure to incorporate the Clean Water Act and the National Historic Preservation Act into HCPs results in delays of the development process, and a loss of funding for conservation efforts. For example, the Western Riverside Habitat Conservation Plan includes a policy that protects riparian species such as the arroyo toad and numerous riparian birds.

However, this policy does not address CWA requirements. Agencies that implement the act, including the Army Corps of Engineers and the California Water Resources Control Board, do not generally participate in the development of HCPs. Therefore, the analysis, mitigation, and environmental impact statements needed under federal and state laws, and needed for the CWA Section 404 and 401 permits, are not included in HCPs.

This lack of coordination creates confusion for developers regarding permits and Endangered Species Act coverage under the HCP. Although the ESA agencies addressed the riparian/riverine issues related to species in the HCP/NCCP, the developers are then required to obtain CWA permits from the corps and the state WRCB, complete additional environmental impact assessments, and provide mitigation for the CWA permits.

Even though these same projects and jurisdictions have ESA coverage under the HCP, the CWA permitting agencies are required to consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to obtain ESA coverage. In some cases, a "streamlined" consultation occurs. In many cases, due to the lack of alignment of the ESA and CWA requirements, or minor or major changes desired by agencies or developers, an informal or formal ESA consultation is required. The consultations take several months to several years to complete.

In California, the DFW issues an NCCP permit for the state's Endangered Species Act. Additionally, they require a streambed alteration agreement. This process is closely aligned with the CWA permits. When developers discover they need an additional permit from the same department that issued the NCCP, they lose confidence and support for the HCP/NCCP.

In Palm Springs, the Coachella Valley Multiple Species Habitat Conservation Plan focuses on maintaining natural processes such as fluvial and aeolian transport and wildlife corridors. The corps was not involved in the negotiations for the HCP; however, the ESA agencies coordinated with the corps regarding future permitting needs for the CWA.

A few years after the HCP was completed, the corps and the Regional Water Quality Control Board worked with the implementing agency to create a CWA-based In-Lieu Fee Program to complement the HCP, assist in funding the plan, and streamline CWA permitting in the area covered by the plan.

There are additional opportunities for jurisdictions with HCPs to work with the CWA agencies to create streamlined permit mechanisms, such as mitigation banks and in-lieu fee programs. Ideally these processes would be done concurrently. However, if the entities involved in the development of HCPs understand other laws and requirements and would work with the other permitting agencies, HCPs could serve as the base document and National Environmental Policy Act access point for other permitting requirements. Tools such as the joint corps- EPA Mitigation Rule can complement and assist in funding.

Additionally, a programmatic agreement, issued by the state historic preservation office for its NHPA requirements, could be created for the area covered by the HCP or in-lieu fee/mitigation bank. This could be another benefit in a coordinated process. Tribal consultation ensures that sacred places and important sites are addressed within the landscape planning effort. This effort can preserve important areas and avoid future development conflicts. HCPs can be a tool in high-resource-conflict areas to address listed species, water allocation, land use, and tribal concerns. Integrating environmental laws and landscapescale planning efforts can be the basis for resolving long-standing resource conflicts. Optimizing analyses, aligning NEPA decisions, and coordinating permitting processes saves time and money and improves conservation.

Therese O'Rourke Bradford *has worked on landscape-level planning efforts for several federal agencies and a nonprofit organization. She now works for the Bureau of Reclamation in Klamath Falls, Oregon.*

Lynn Scarlett
Managing Director, Public Policy
The Nature Conservancy

BIGGER MAY SOMETIMES BE BETTER

BY LYNN SCARLETT

In December, over 190 nations committed to reducing greenhouse gas emissions. These commitments mean new development — of wind, solar, and other energy infrastructure. In the United States, some project wind energy climbing from 4 percent of electric power to 20 percent by 2030. Alongside energy infrastructure, we see burgeoning cities stretching out into the countryside, and new roads to accommodate more people. These trends reflect economic opportunities — and

they respond to the needs of communities. But they also mean land transformation that can fragment wildlife habitat, disrupt water flows, and put species at risk.

As these pressures continue, Habitat Conservation Plans approved by the Fish and Wildlife Service and National Marine Fisheries Service, consistent with the goals of the Endangered Species Act, provide an important vehicle to achieve conservation. These plans set forth how impacts to species listed under the ESA will be avoided, minimized, or offset, while providing a pathway for needed development. Yet effective use of these plans requires some recalibration. Beyond the pace of infrastructure, we see other challenges that unfold at large scales. Vegetative fuel build-up in forests, water quality problems, the many effects of climate change, and the spread of invasive species present interconnected impacts across large landscapes.

The nature of these challenges suggests a need for conservation planning and management regimes at an ecosystem scale. And they point to a need for a multi-species focus to optimize management actions in striving to implement provisions of the ESA.

By 2012, the FWS had approved 710 plans covering over 40 million acres and hundreds of species. Many of these plans focus on a single species on land parcels of less than 100 acres. Just 5 percent of HCPs apply to areas of 100,000 acres or larger. But some pioneering efforts are underway.

The American Wind Energy Association has proposed a Midwest Wind Multi-Species HCP expected to cover some 33,000 megawatts of new power — over 100 new industrial wind farms — and address requirements to mitigate impacts of 13,000 MW of existing wind generation. The agreement involves eight states and eight listed species and would cover impacts from construction through decommissioning.

The natural world is characterized by interconnections, synergies, and interdependence. Species often function interdependently across landscapes and ecosystems. Addressing these issues requires combined public and private actions across jurisdictions and land ownership boundaries. These challenges put a premium on developing tools for cross-jurisdictional, public-private, and private-private coordination and cooperation.

Thus, development of HCPs at large scales is encouraging. And some of these new-style HCPs are anticipatory in nature — that is, their focus goes beyond legal requirements, and they cover non-listed species.

Consider the city of Seattle, which prepared a plan for 83 species (7 listed and 76 unlisted) that addresses a variety of natural resource issues across a 90,545-acre watershed and includes the city's water supply. The plan involved negotiations among five state and federal agencies to integrate and coordinate issues and conservation responses, such as maintenance of instream flows and fish passage.

Also in the Northwest, Plum Creek Timber Company entered into an HCP agreement for 1.6 million acres in Montana, Idaho, and Washington and covering 17 species of native fish, of which eight are listed as threatened or endangered.

In one especially ambitious effort, the FWS approved a plan with NiSource, a large natural gas company, that covers 10 federally listed species along over 15,000 miles of NiSource right-of-way in an area spanning 14 eastern and central states on 9

million acres of land. Development of the plan involved multiple federal agencies in a coordinated process. The approach exemplifies large-landscape cooperative conservation.

These HCPs help align development plans with the scope and integration of analyses and actions needed to improve conservation results. But challenges in assuring their quality and implementation remain. HCP development is often burdensome and time-consuming; performance requirements are sometimes built upon inadequate information and emphasize management prescriptions rather than performance-based outcomes. And accessing multidimensional information at relevant scales is a work in progress.

Moreover, many HCPs do not yet consider climate change and its effects on wildlife. Incorporating adaptive management approaches into HCPs could help those implementing plans incorporate new information and revised threat assessments.

Despite these challenges, the emergence of large-scale HCPs holds promise for applying a conservation lens more consistent with perceiving and addressing interdependencies and ecosystem health. These efforts also have potential to enhance collaborative conservation partnerships, shifting species protection dynamics away from zero-sum debates toward results that protect species, secure healthy lands and waters, and sustain economic opportunity. Therein resides their greatest promise.

Lynn Scarlett *is managing director, public policy, at The Nature Conservancy and served as deputy secretary of the interior.*

James R. Strittholt
President and Executive Director
Conservation Biology Institute

MAPPING TECH KEY TO DATA APPS THAT BUST SILOS

BY JAMES R. STRITTHOLT

Effective HCPs rely on highquality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent.

Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult.

Four major problems have plagued efficient and effective use of these resources, including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data-sharing and collaboration platform that was developed by the Conservation Biology Institute

to address the four major barriers. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing.

Users can explore and easily integrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace, where they can save all of their content, and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs — the most noteworthy being the Desert Renewable Energy Conservation Plan in southern California, or DRECP. This effort included the creation of a customized Data Basin gateway focused on this geography and resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models.

Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process.

Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them.

As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs, such as climate change. Users need complex topics presented in an easy-to-use application that allows flexible interaction with the content, yielding meaningful, actionable results (for example, California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least-conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allow for the incorporation of data through routine field surveys collected by ground crews as well as data from instrumentation from various types of sensors; these include water quality sensors and acoustic sensors

for bats and birds. Keeping the data and information up-to-date is critical to a successful HCP, and having a durable system to house it all is fundamental.

Without disrupting existing datamanaging institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management — all in a costeffective manner.

James R. Strittholt *is president and executive director of the Conservation Biology Institute.*

Martin Wachs
Distinguished Professor, Emeritus
University of California

IT'S ALL ABOUT FINDING THE MONEY

BY MARTIN WACHS

Large-scale ecological protection is costly. Some of the greatest costs come early — those of Habitat Conservation Plan formation, reaching agreements that result in take permits, and acquiring large tracts of land. HCPs covering millions of acres need tens of millions of dollars to support their formation and hundreds of millions more to buy land. The substantial benefits justify these costs but come much later. And, assistance from Endangered Species Act Section 6 grants and similar funding from state programs is becoming harder to get because of stiff competition for fewer dollars.

To find needed front-end funding, HCP planners must partner with agencies and developers whom they once considered to be their opposition. Private land developers and public infrastructure agencies increasingly realize that long-range conservation plans produce substantial savings by enabling commercial developments and infrastructure to be built earlier at lower cost and with fewer legal challenges than when each road, bridge, power plant, or condo complex meets its mitigation obligations in piecemeal fashion. This new attitude can lead to partnerships that facilitate development while protecting species.

An important source of local funding is impact fees levied on land development of residential, commercial, and industrial projects. Fees are collected when building permits are issued for new development. The Riverside County, California, HCP authority, for example, obtains about two-thirds of its revenue from development fees. Clark County, Nevada, charges impact fees on all new development even where it does not directly impinge upon sensitive habitats.

Impact fees suffer from a systematic shortcoming, however. When the economy expands and new development is booming, revenue from impact fees rises but so does the price of land needed to implement the HCPs. During recessions, when development slows, land prices drop and HCP agencies can buy it at lower cost. But, when development slows, so does the flow of impact fee revenue used to buy land. Few sources are available for bridge funding, which would allow HCPs to borrow money for land purchases from willing sellers during economic downturns when prices are low, to be later repaid with interest when the economy improves and revenues from development fees rise.

Establishing low-interest revolving loan funds dedicated to species conservation also would increase infrastructure agencies' access to funding for HCPs. This could

be done under the auspices of state infrastructure banks or through financing by the federal Transportation Infrastructure Finance and Innovation Act. HCPs can also access wetlands conservation loans from a fund established under the Clean Water Act. Establishment of a revolving loan fund dedicated to species protection, perhaps under the ESA, would provide greater access to lowinterest loans for HCPs pursuing efficient, lower-cost land acquisition strategies, and would be especially valuable when development slows.

It is usually necessary for HCPs to piece together funding from disparate sources. Consolidating funding from state and federal programs to enable regional advanced mitigation planning would, for example, be helpful to HCPs and to infrastructure providers. The creation of stateand federal-level conservation clearinghouses might provide one avenue to available grant money, facilitating larger-scale conservation projects and programs while reducing administrative costs to local applicants.

A start on this was made by the still fragile Conserve Florida Water Clearinghouse, a collaboration of the state Department of Environmental Protection and Regional Water Management Districts, created by state legislation to unify water conservation efforts. New York and Washington are state models in this area.

To benefit, HCPs have to work with agencies that build and operate infrastructure and with businesses that develop private land and who in the past have been their adversaries.

Environmental interest groups traditionally opposed ballot measures to finance infrastructure, but recently their support has been instrumental in achieving voter approval of measures that finance infrastructure while also providing funding for HCPs. In California, Orange County's Measure M2 allowed the county to acquire land ripe for development that now will mitigate future construction of roads named in the measure. And San Diego County's TRANSNET sales tax, which will provide over $14 billion for transportation improvement projects, incorporates $650 million in mitigation measures, featuring HCP land acquisition.

Including HCP land acquisition in the TRANSNET sales tax also garnered support for the ballot measure from environmental advocacy groups. This was a notable reversal since environmentalists had traditionally opposed tax measures to fund transportation projects which they believed harmed the natural environment. Changes like these are leading the way forward.

Martin Wachs *is distinguished professor emeritus of city and regional planning and civil and environmental engineering at the University of California, former chairman of the Department of Urban Planning at UCLA, and former director of the University of California Transportation Center.*

Douglas P. Wheeler
Partner
Hogan Lovells US LLP

IT AIN'T BROKE BUT IT SHOULD BE FIXED

BY DOUGLAS P. WHEELER

When administrators of multiple-species Habitat Conservation Plans from around the country met last November to compare experiences and identify obstacles to success, they were the embodiment of remarkable progress in effective use of a oncedormant conservation strategy.

An amendment of the Endangered Species Act, Section 10 authorizes the issuance of "incidental take" permits, but only on condition that applicants prepare a comprehensive HCP to mitigate the adverse effects of otherwise lawful development. Very few ITPs were written until the adoption by Secretary Bruce Babbitt of a "no surprises" policy.

This incentive, which offers binding assurance that an HCP — once written and approved — would suffice to meet the anticipated needs of covered species and their habitats, has had the desired effect. Today, more than 700 HCPs are in place, and, when written to meet the needs of multiple species over a large area, they are a means to achieve species protection while accommodating needed development.

Multi-state HCPs are now in preparation, and the federal government itself — in cooperation with affected states and stakeholders — has embraced multi-state HCPs to resolve otherwise intractable resource conflicts in places like the California Desert and the San Francisco Bay-Delta estuary.

As conferees observed in November, however, this expansive use of HCPs and multi-state HCPs has come at a price. Paradoxically, as plans have become more far-reaching and comprehensive, they have become more costly, time consuming, and controversial.

Today's practitioners have learned to discount assurances in the original HCP Handbook, now 20 years old, that the process is streamlined, flexible, and transparent. They can recount contemporary instances in which plans have languished for years pending approval by multiple levels of authority in several agencies and accumulating costs in the millions. What, then, can be done to correct these defects and restore confidence in this indispensable planning tool? Among participants at the meeting in November, there were at least these three suggestions: to the extent possible, integrate ESA permitting requirements with those of other statutes; delegate to the states increased responsibility for implementation of endangered species programs; and provide federal financial assistance in the form of loans and loan guarantees for habitat acquisition.

Section 10 was not enacted to provide one-stop shopping for resource-related federal permits, or even to include entire ecosystems. But as the scope of multi-state HCP planning has been expanded to include entire watersheds and ecosystems, it has become apparent that integration of permitting processes is not only desirable to reduce regulatory burdens, but necessary in the case of overlapping responsibilities for the same resource.

The National Environmental Policy Act would appear to require this approach, in any event, as it encourages the coordinated preparation of Environmental

Impact Statements. For instance, while the Corps of Engineers' Special Area Management Plans may have served the corps's planning purposes, they did not lead to integration of planning requirements for endangered species, or the coordinated issuance of Clean Water Act Section 404 and ESA Section 10 permits.

More recently, however, the Sacramento District of the corps has proposed to fully integrate its Section 404 responsibility with the South Sacramento Habitat Conservation Plan, eliminating the need for project-by-project ESA Section 7 consultations. In addition, through reliance on the South Sacramento HCP, the corps would achieve programmatic compliance with Section 7, CWA Section 401, and Section 106 of the National Historic Preservation Act.

ESA Section 6 requires that the secretaries of the interior and commerce "shall cooperate to the maximum extent possible" with the states, and provides specific authority for cooperative agreements with states that maintain "an adequate and active program for the conservation of endangered species and threatened species." Though such agreements exist, they are largely the vehicle through which the secretaries provide modest financial support for state programs. At a time when their own resources are constrained, the Fish and Wildlife Service and National Marine Fisheries Service should be encouraged to delegate responsibility for administration of the ESA to states, like California, which have robust programs of their own.

Western Riverside County Regional Conservation Authority, sponsor of an ambitious 146-species HCP, has argued successfully for inclusion in the Water Infrastructure Finance and Innovation Program of authority to use infrastructure loans and loan guarantees for the acquisition of HCP habitat. It has proposed a similar provision for inclusion in the program for support of transportation infrastructure under the Transportation Infrastructure Finance and Innovation Act and stand-alone legislation that would make such assistance available to sponsors of HCPs, whether or not associated with a particular infrastructure project.

Douglas P. Wheeler *is a partner at Hogan Lovells-US LLP in Washington, D.C.*

PLACEWORKS

3 MacArthur Place, Suite 1100, Santa Ana, CA 92707
(714) 966-9220 WWW.PLACEWORKS.COM

Cc: Lindell Marsh[lmarsh@collaboration-in-governance.org]; Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]; Alejandro Camacho[acamacho@law.uci.edu]; Michael Robinson-Dorn[mrobinsondorn@law.uci.edu]; Charles Landry[clandry@wrcrca.org]; Dennis Grossman[denny.grossman@sgc.ca.gov]; David Willms[david.willms@wyo.gov]; James Murley[james.murley@miamidade.gov]; Myles Culhane[myles_culhane@oxy.com]
To: Brett Korte[korte@eli.org]; Wheeler, Douglas P.[douglas.wheeler@hoganlovells.com]; James McElfish Jr.[mcelfish@eli.org]
From: Lindell Marsh
Sent: 2018-01-15T22:25:24-05:00
Importance: Normal
Subject: CCG-ELI 1/18 Dialogue Session; FINAL Session Outline
Received: 2018-01-15T22:26:40-05:00
2018.1.18 SessIon Outline.docx
2018.1.10 CCG-ELI 2018.1 Sess - Working Final.xlsx
HCP_FINALemailQuality_2016-10-19.pdf

January 15, 2018
Doug, Brett, Jim,
REVISED FROM MY EMAIL OF 1/14:

Attached are

- FINAL Session Outline (subject to your further revisions)
- SAME Status spread sheet of anticipated participation (disregard the yellow cells)
- SAME Final Report on the Future of HCPlanning

We are expecting two additional "Briefs"

- Culhane (Pacos)
- Greer. (SANDAG)
- Hasson (TNC)

Following is an update on the "call ins"; I assume that you, Brett, can email them … or I let me know and I can provide telephone numbers.

- Grossman: Cal Strategic Growth Council (confirmed for 11:15)
- Willms: WGA (1:00, to be confirmed)
- Murley: Miami-Dade Resiliency Officer. (2:15, subject to confirmation)

You now should be able to send out finals ***to all*** on our list ithe Session Outline and the earlier Report and providing to those attending remotely appropriate call in or viewing instructions.

My flight leaves at 6:45a PT tomorrow, with a stop in Atlanta (2:05ET) and Reagan (4:49ET). If you would like to talk, I can call you from Atlanta or D.C. (when I arrive). Also, please read through the revised draft Session Outline and feel free to make any clear revisions or addition.

In looking at the spread-sheet, think about anyone else who we might include. I am copying

Myles Colhane with the idea that he might like to invite the NFWF staffer who has been working with him on the Pecos. My hope is that this work will provide the foundation for furthering the development of land-scape level conservation in anticipation of growth and infrastructure and other development. Under other circumstances, it would be interesting to convene a high-level inter-agency working group focused on this concept.

Thanks for collaborating on this. I think that it puts on the table some interesting ideas for next steps (even with the chaos in D.C.).

Lindell

Lindell L. Marsh, Executive Director
Center for Collaboration in Governance
O: 949-706-7095 | M: 949-300-0042

CCG-ELI DIALOGUE SESSIONS
FUTURE OF HABITAT
CONSERVATION PLANNING
January 18, 2018 Session:
Multiple Agency/Interest
Collaboration &
Funding/Financing

Update 1/14/18

Y: Yes
N: No
R: Participating Remotely
B: Invited to Author Brief; r: received
P: Invited to Present Remotely; c: confirmed

			1st Sess.5/17		2nd Sess1/18/18
Korte	Brett	ELI, Co–convener	Y	Y	Y
McElfish	Jim	ELI, Co–convener	Y	Y	Y
Marsh	Lindell	CCG, Co convener	Y	YP	Y
Wheeler	Douglas P.	Hogan, Lovells	Y	YP	YBr
Wachs	Martin	UCLA	Y	WP	RBr
Lederman	Jamiee	UCLA	Y	YP	Ybr
Camacho	Alejandro	UCI Law	YW	W	R
Sciara	Gian Claudia	UTA	Y	W	NBr
Murley	Jim	Resiliency, Miami, Florida	YW		RPB
Soloman	Gerald	USDOT Dep. Dir. Off. Pol. Dev. Strat. Pl. and Proj.	Y	YP	NBr
Heberling	Paul	USDOT, Off of Pol. Dev., Strat. Pl. and Perf.; Off. Of Sec.	N	Y	YBr
Quarles,	Steve	Nossaman	N	Y	Y
Li	Ya Wei	Defenders of Wildlife		YP	Y

korte@eli.org
mcelfish@eli.org
lmarsh@collaboration-in-governance.org; 949-300-0042
douglas.wheeler@hoganlovells.com
mwachs@ucla.edu ; (b) (6)
acamacho@law.uci.edu; (b) (6)
sciara@utexas.edu; (b) (6)
James.Murley@miamidade.gov; (b) (6)
gerald.solomon@dot.gov; (b) (6)
paul.heberling@dot.gov
Ya Wei Li @defenders.org: N Jake, maybe Mark.

			1st Sess.5/17		2nd Sess1/18/18
Salvo	Mark	Defenders of Wildlife			Y
Meyers	Erik	Conservation Fund			Y
Reed	Kelly	Conservation Fund			Y
Eggleston	Shannon	AASHTO			
Baur	Don	Perkins Coie	N	IP	?
Greer	Keith	SANDAG (Case study)	N		NP
Bean	Michael	EDF	Y	IP	N
Rupp	Mark	EDF			Y
Brodnax	Sara	Policy Specialist, EDF			N
Olson	David	ACOE	Y	Ipr	NBr
Phillips	Patrick	President, ULI	I		N
Grossman	Dennis	Ca Strategic Growth Council	I	W	RP
Zippin	David	ICF	I		N
Scarlett	Lynn	TNC	I	I	N
Hasson	Tomer	TNC	I	W	YB
Bodhane	Zach	WGA		W	N
Willms	David	WGA	R	W	RP
Kennett	David	C. Calvert Staff	N	IP	No response
Foley	Ian	House Staff	N	I	No response
Segal	Alexis	Sen. Feinstein Staff	N	I	No response
Leggett,	Matt	Senate EPW Comm. Staff		I	No response
Male	Tim		Y	Y	Y
Beale	Chris	Ca,Resources Legacy Fund	N		No response
Silver	Dan	EHL	N	W	No response
Smart	Ryan	1000 Friends of Florida			No response

mark salvo@defenders.org
emeyers@conservationfund.org; invited paper
seggleston@aashto.org; invited, no response
baurd@perkinscoie.com No response.
Keith.Greer@sandag.org; to provide paper.
michaeljbean@gmail.com
mrupp@edf.org
sbrodnax@edf.org
david.b.olson@usace.army.mil
(b) (6) Patrick.Phillips@uli.org Katherine Burgess, (b) (6)
denny.grossman@sgc.ca.gov; (b) (6) Need to confirm remote presentation.
No response
tomer.hasson@tnc.org: Call re brief.
zbodhane@westgov.org Call re participation.
david.willms@wyo.gov
Dave.Kennett@mail.house.gov
alexis_segal@feinstein.senate.gov, 202.224.3841.
Matt_Leggett@epw.senate.gov
(b) (6)
cbeale@resourceslawgroup.com
(b) (6) (b) (6)

			1st Sess.5/17		2nd Sess1/18/18
Draper	Eric	Audubon Florida	W	W	N
Adamo	Chris	Former CEQ staff	N		I/11/13
Kramer	Mark	TNC	N		N
Potter	Craig	Past Acting AS SOI FWP and EPA DA for A&R	N	IP	N
Barry	Don	Past ASOI FWP	Y	N	N
Culhane	Myles	Occidental Petrol	Y	IP	YB
Landry	Charles	WRRCA	N		RBr
Keppen	Dan	Ex. Dir. Family Farm Alliance		W	No response
Skipwith	Aurelia	Dep AS. for FWP.	Y	IP	N
Boling	Ted	CEQ	N	Y	Y
Murley	Jim	Resilience/Miami	N		N
Marsh	Christian	Downey Brand			N
Birdsong	Johnathon	NFWF			N
Bailey	Amy	Caltrans Adv. Mit.			N

wericdraper@gmail.com; now State Parks
cadamo@gmail.com (he is exploring a rep from NWF)
cpotter@jcpotterlaw.com
(b) (6)
myles_culhane@oxy.com
CLandry@wrcrca.org
dankeppen@charter.net; (b) (6) Possibly available in the morning, remotely.
Aurelia_skipwith@ios.doi.gov.
eboling@ceq.eop.gov
james.murley@miamidade.gov
cmarsh@downeybrand.com

Center for Collaboration-in-Governance | Environmental Law Institute

The Future of Wildlife Habitat Conservation Planning[1]

Dialogue Session: January 18, 2018

ELI Offices, 1730 M Street NW, Suite 700, Washington DC 20036

An Invitational Dialogue on

MULTIPLE AGENCY/INTEREST COLLABORATION AND FUNDING AND FINANCING REGARDING LANDSCAPE-LEVEL CONSERVATION IN ANTICIPATION OF GROWTH

DIALOGUE SESSION OUTLINE

For further information:
CCG: Lindell Marsh, Ex. Dir.: O: 949-706-7095| M:949-300-0042; lmarsh@collaboration-in-governance.org
ELI: 202.939.3800, James McElfish, Jr. Sr. Attorney: mcelfish@eli.org; Brett Korte: Korte@eli.org.

JANUARY 18, 2018 SESSION

The May, 2017 dialogue session hosted by ELI in Washington, D.C. addressed the topic of funding and financing. It was clear by the end of that session that we needed further work on this topic, to provide greater detail**. *The second CCG-ELI session is to occur on January 18, 2018 (9:30 a.m. – 3:30 p.m.)*.** It was initially intended to focus solely on modes of "collaboration", but it has become clear that we needed to further discuss funding as part of this session. As a result, the January session will focus on collaboration (particularly among the various public agencies) and will include a further, related, discussion of funding and financing.[2]

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[1] In cooperation with the Center for Land, Environment and Natural Resources, U.C. Irvine School of Law.

[2] Participation is by invitation, approximately 20 are anticipated in person and others remotely, including federal and state representatives, nongovernmental organizations, academics, and infrastructure and development interests, as well as attorneys with experience in these areas. Below is an outline of points, questions and topics that will provide the foundation for the dialogue session, together with pages 38 through 50 of the Report prepared by CCG on the early dialogue sessions on the

SESSION TIMELINE

9:30 ET: Convene
11:00 – 11:15: Break
11:15: Call in: Dennis Grossman, Off. of the Gov., CA., Adv. Conservation
12:30 1:00: Lunch
1:00: Call in: David Willms, WGO ESA Effort (*to be confirmed*)
2:00 2:15: Break
2:15 2:30: Jim Murley, Miami Dade, Resiliency Officer
3:30: Adjourn

BACKGROUND

A little over a year ago, the Center for Collaborative Governance (CCG) published its ***REPORT ON THE FUTURE OF HABITAT CONSERVATION PLANNING*** (CCG Report), attached below, based on a series of dialogues co hosted by CCG, and the Center for Land, Environment and Natural Resources in the University of California, Irvine School of Law. This report addressed critical issues facing the Nation regarding the conservation of wildlife habitat in the face of significant anticipated growth in population and related infrastructure (and other development). In particular, it addressed the need for early landscape level conservation in anticipation of such development and, in turn, the need to collaborate at the local, State and national levels to craft the necessary plans or strategies to best provide for such development as well for conservation of eco systems at a landscape level. It pointed out the need for increased funding for such planning and the implementation of the plans created. Finally, it acknowledged the need to further explore in greater detail how and by whom such conservation planning and implementation should be funded. And, raised questions as to how a multitude of "silo like" agencies and interests (at the local, regional, State or national levels), could come together to collaborate, in efficiently constructing, approving and implementing plans that would be effective and fair in allocating the burden, under what we all understand are very complicated circumstances.

The CCG Report was helpful in providing a beginning overview, but acknowledged that further detailed work was called for to understand and address the issues. It also acknowledged that it

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Future of Habitat Conservation Plan (attached below). Following the session a draft report will be prepared (without attribution), for review by the participants and further editing.

was not only necessary to articulate a "right" approach, but that we find a way for the broader constituency of agencies and interests to collaboratively "join in". It called for dialogue and a broader understanding among the agencies and interests involved. Two key issues and questions regarding "who" pays and "how," and then how we bring together the affected constituency of agencies and interests into a coherent effort resulting in "plans" for moving forward. And so, CCG and the Environmental Law Institute ("ELI") have undertaken to convene several dialogue sessions to explore these issues: first, the funding and financing of wildlife habitat conservation in anticipation of growth, and, second, the question of how we can further collaboration among the agencies and interests who need to be at the table (locally, regionally, nationally, etc.).

ADVANCE PAPERS ("BRIEFS")

In preparation for the January dialogue session, various and then all participants were invited to draft, in advance of the session, very short (one to two page) briefs on specific topics – in large part: potential approaches or past experiences and what might be expected to be successful in the future. As of this Session Outline, the following briefs have been provided and included below or will be provided orally during the Session:

Attached:

1.) David Olson (USACE), ***Aligning Special Area Management Plans, Clean Water Act Section 404 and Habitat Conservation Plans.***

2.) Jaimee Lederman, Martin Wachs (UCLA), and Gian-Claudia Sciera (UT), all Ph.,D.s, based in part on a report by Charles Landry (Western Riverside MSHCP), ***Economic Efficiency of HCPS***.

3.) Gerry Soloman and Paul Heberling (USDOT), ***Coordination of Transportation and Wildlife Conservation***

4.) Douglas Wheeler, Esq. (Hogan, Lovells), ***Funding of Chesapeake Bay Conservation Efforts.***

5.) Myles Culhane (Occidental Petroleum), ***Pacos River Valley Conservation Effort***.

6.) (*to come*) Keith Greer (SANDAG**), *SANDAG Advance Mitigation Program and Proposed Improvements***.

7.) (*to come*) Tomer Hasson (TNC) ***Advance Landscape-level Mitigation Programs***.

To be presented, remotely, during the Session:

8.) Jim Murley (Miami-Dade Resiliency Officer)., Collaborative Conservation/Water/Resiliency Planning and Funding in South Florida ***(Everglades, South Florida).***

9.) David Willms (WGA): ***Perspectives From the WGA Effort.***

10.) Dennis Grossman (COPR), ***A.B. 2087: Regional Conservation Considerations and Funding.***

SESSION OUTLINE

The Broad Picture:

1. It has been suggested that "information technology" has caused our public and private sector "silo like" institutional boundaries (both public and private) to become more permeable and the "silos" less insular. Information sharing and coordinated and collaborative decision making and implementation is becoming increasingly commonplace. However, this is a relatively new way of working; we need a greater understanding of the principles and practices of "**collaboration**". This is CCG's focus.

2. HCPs, now covering millions of acres nationally, are an early example of ***collaboration*** (at the local, State and national levels, and among public and private sector agencies and interests) regarding ecological communities and systems. Other examples include: the Chesapeake Bay and the South Florida Everglades restoration plan, which involve significant water, wildlife, natural resources and other systems and interests. (Regarding collaboration and economic advantages of HCPs see: Brief 4, Wheeler, re the Chesapeake Bay and watershed; Brief 2a, Leberman, Wachs and Sciara regarding collaborative funding; Brief 2b, Landry, regarding the economic benefits of HCPs; and, Brief 5, Culhane, regarding the Pacos River Valley conservation planning effort).

3. Another approach at collaboration has focused on inter agency collaboration that has been seen as ***alignment*** of, e.g., USACOE planning:SAMPS, Clean Water Act and HCPs (See Brief 1, Olson, USACOE), and as coordinated (e.g., **the *Eco-Logical program*** focused on wildlife (USFWS) and transportation (USDOT). (See Brief 3, Soloman and Heberling, USDOT).

4. The collaborative efforts, such as HCPs, some suggest, are harbingers of much broader collaborations, such as "resiliency" efforts now underway in the Miami Dade sub region, focused on changes in weather patterns, water levels and tides. (See, Attachment 8, Murley). In anticipation of other efforts, such as those regarding the need to address transportation, housing and infrastructure together, in light of concerns regarding population growth, increasing scarcities of food, drinking water and transportation congestion, and shared air quality concerns – not just locally or at a State level but at a national and international level.

5. Programs, e.g., efforts such as NEPA (and CEQA in California) provide a broader agency/interest "picture" of environmental concerns and impacts and is currently being reviewed by CEQ to promote increasing efficiency of such efforts.

6. ***The allocation of the burdens in collaboratively addressing these concerns is a key task.*** Our legislative and administrative systems are "silo like", as well, and often address concerns in an un coordinated manner. On the other hand, consider the collaborative planning, administrative arrangements and funding of various phases of area wide HCPs, such as the 1.2 million acre Western Riverside MSHCP (Brief 2b) or the 22 million acre California Desert Conservation Plan.

Phases of Landscape-conservation Planning:

- ***Area-wide eco-system characterization*** (e.g., identification of: habitat of the ecological community, "cores", "linkages" and species of special concern, including "narrow endemic species") and the identification of areas for conservation.

- ***Collaborative/HCP*-like *planning arrangements***.

- ***Provision of public lands and acquisition of private lands*** to be conserved.

- ***Coordinated management of conserved lands***.

Each phase may call for a different caste of agencies and interests and different sources of funding at the table posing different questions regarding who should bear the burden of the particular effort.

Lands Affected (e.g.):

- Federal lands: BLM, USFWS, BuRec, Forest Service, DoD, Nat. Monument lands
- Waters and Submerged lands: State, Federal (including: EPA, BLM, NOAA, USACOE)
- Tribal lands: reservation and treaty lands

- State lands: tide and submerged lands, park lands, waterways, sections
- Private lands: (including checkerboard/intermingled lands)

Development likely to generate demand for habitat conservation at a landscape level.

- Public infrastructure (transportation, water, energy, etc.)
- Pipelines/Transmission ROWs
- Energy Development (mining, oil and gas, renewables)
- Urban/suburban development
- Military
- Coastal defense/resilience
- Other (e.g., agriculture, ranching, and timber)

Regulatory and Related Agencies and Entities

- Federal: EPA, USFWS, USACOE, NOAA/NMFS, BLM, USDOT, HUD, USBOR, CEQ
- States
- Regional
- Local

Funding Sources.

- Development and activities (taxes, exactions, mitigation)

- Local taxes (sales, real estate parcel)

- Advance State and Federal funding, perhaps bond funding (Florida) or federal loan guarantees (e.g., HUD New Towns) or grants: (UDAG; Section 6) re conservation and community development; or, WIFIA or TIFIA loans for water or transportation infrastructure; and loan guarantees

- Ongoing and incidental fees and charges: tax increment financing; covenants running with the land

- Conservation Agreements, easements, tax transfers, transfer of development rights etc.

- Transportation, water, waste, energy fees
- Resilience funding.

Beginning Questions/Suggested Premises

What we have learned: It is suggested that it is more economically efficient, and more conservation effective, to conserve wildlife habitat, develop advance compensatory mitigation at a landscape level and in advance of growth and development. We should work to find a way to do this. Perhaps utilizing HCPs as a beginning model, but developing parallel approaches. This could be a model for other complex land/water related planning problems. The idea would be to:

- Satisfy applicable local, State and federal regulations in one swoop.
- Identify significant funding to secure this conservation up front and provide for "compensatory mitigation" to repay the costs of up front conservation and processing.
- Establish collaborative planning processes at an early point in the process.

With the understanding that it will not be easy. However, it can be done. For example,

- At the outset, conservation and development interests and public agencies could agree to collaborate. To find a common way forward to provide advance mitigation. In suggesting this, "collaboration" is more than simply coordination, at best it rests on principles of respectfulness, truthfulness, good will, and civility.
- It also requires "leadership", not that dictates a specific result, rather assists those involved to work "collaboratively". Perhaps, the President's Council on Environmental Quality could lead in the development of a national program that embraces this concept.
- Perhaps a series of pilot or model programs could be pursued. Some are already in process.

A First Question: How are the lands to be conserved identified? By whom?

A question is what would a national program look like to identify and provide for conservation in anticipation of growth and development?

The sections above express the complexity of such a challenge. And yet, arguably, the most cost effective approach would be to provide for funding (from various public and private sources) to plan for and acquire conservation lands in advance to be re paid from infrastructure and other development.

A related and, perhaps, prior question is how would the lands to be conserved be identified?

How do we bring together and have the constituencies of public and private agencies and interests come together and collaborate to address questions such as which lands are to be conserved and managed and what are the sources of funding? It is suggested that the HCP model: collaborative scoping, conservation plan, implementation agreement and funding, could provide a conceptual beginning point.

A Second Question: Underlying the questions of "which lands" and "who funds" is a key question of how we provide the quality of *collaboration* necessary to effectively explore these questions? As we suggested above, our information technology has not only supported but has encouraged us to be more efficient through communication, cooperation and, in complex decision making circumstances, collaboration. It is suggested that this may be one of those circumstances.

BRIEFS

1.) David Olson (USACOE), *ALIGNING SPECIAL AREA MANAGEMENT PLANS, CLEAN WATER ACT SECTION 404 PERMITTING AND HABITAT CONSERVATION PLANS*.

The protection of natural resources and satisfying the needs of a growing human population can balanced by aligning compliance with environmental laws through proactive, thoughtful coordination and planning efforts. One approach to achieving this balance is the concept of Special Area Management Plans (SAMPs), which was first articulated in the 1980 amendments of the Coastal Zone Management Act. A SAMP is a comprehensive plan that provide for natural resource protection and reasonable economic growth. It contains a detailed and comprehensive statement of policies, as well as standards and criteria to guide public and private uses of lands and waters, as well as mechanisms for timely implementation of the plan.

In 1986, the U.S. Army Corps of Engineers (Corps) issued guidance (Regulatory Guidance Letter 86-10) to its division and district offices on how to adapt the SAMP concept to the Corps' permitting authorities under section 404 of the Clean Water Act. Under section 404, the Corps regulates discharges of dredged or fill material into waters and wetlands. Under that guidance document, the goal of a SAMP is to promote collaborative interagency planning within a specific geographic area of interest. This collaboration should including all appropriate levels of government (federal, tribal, state, and local), as well as their regulatory and resource agencies. The geographic area covered by a SAMP could be a watershed, a county, an ecoregion, or other type of geographic unit. To justify the expenditure of agency resources to develop and implement the SAMP, the natural resources located within that geographic unit are subject to strong development pressure. In addition, to be successful the SAMP should be developed with full public involvement and have the support of the local land use planning authority. The development of the SAMP requires stakeholder involvement because it needs to achieve a balance of protecting the natural resources of concern while allowing development activities that fulfill the needs and interests of the people who live, work, and visit the area. From the Corps' perspective, to justify the staff time and effort required to develop a SAMP, it needs to result in some regulatory efficiency, such as a general permit to authorize categories of activities that will have no more than minimal adverse environmental effects and fit within the development and natural resource protection framework of the SAMP.

In addition to wetlands and waters, the SAMP approach can also be applied to other categories of natural resources, such as federal- and state-listed endangered and threatened species and their habitat. These larger scale planning efforts can also promote the use of natural infrastructure as a cost-effective alternative to grey infrastructure. The types of natural resources that are managed through the SAMP approach can be determined at the local level by the participating agencies and stakeholders. For example, the Corps' section 404 permit program has been aligned with large-scale Habitat Conservation Plans being developed under the Endangered Species Act section 10 process. There are a number of examples in California (e.g., Santa Clara County and East Contra Costa County) where the

Corps has worked with the U.S. Fish and Wildlife Service and county governments to align the Clean Water Act section 404 and Endangered Species Act section 10 processes to provide predictability and streamlining to assist project proponents in complying with Clean Water Act section 404 and the Endangered Species Act. Two additional efforts to align Clean Water Act section 404 permitting and large-scale Habitat Conservation Plans are currently underway in California in Placer County and South Sacramento County. These alignment efforts can protect a broad range of species and habitats, and encourage the use of low-impact development strategies.

Consolidated mitigation approaches, such as mitigation banking and in-lieu fee programs, can be an important tool for offsetting natural resource impacts caused by development activities within the geographic area covered by the SAMP, and achieving natural resource protection goals. A mitigation bank is a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas, species habitat) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for authorized impacts to those resources. An in-lieu fee program also restores, establishes, enhances, and/or preserves resources to offset permitted impacts, and it does so through funds paid to a governmental or non-profit natural resources management entity that does the mitigation work. A mitigation bank or in-lieu fee program can support a SAMP by acquiring lands that either contain high quality natural resources the SAMP was developed to protect or lands where those natural resources can be restored. Those conserved or restored natural resources would be protected by conservation easements or similar land protection instruments and provide compensatory mitigation for permitted impacts to those resources caused by development activities. Restoring or conserving those natural resources through a mitigation bank or in-lieu fee program can also help address concerns about the taking of private property for the public benefits those resources provide, because the mitigation bank or in-lieu fee program sponsor is willing to restore and conserve those natural resources to be able to sell or transfer those mitigation credits to permittees.

In addition, combining conservation planning and development planning through a SAMP can help manage cumulative impacts by getting the various agencies and stakeholders to work together to develop a unified vision for the study area that satisfies both natural resource conservation and economic development goals. Because cumulative impacts to natural resources are caused by multiple sources, and no single government agency or program has the authority to manage cumulative impacts on its own, a cooperative approach that involves all the relevant government agencies and stakeholders is necessary to ensure that cumulative impacts to natural resources in the region do not reach levels that are unacceptable to the community and stakeholders.

2.a.) Jaimee Lederman Ph.D and Martin Wachs, Ph.D. (UCLA), and Gian-Claudia Sciara, Ph.D. (UT) based in part on a report by Charles Landry (2.b., below), ***FEDERAL FUNDING OPPORTUNITIES FOR REGIONAL CONSERVATION INITIATIVES*.**

Regional conservation programs are increasingly forced to take creative approaches to accessing Federal funds. Ever scarcer funding has made it difficult for regional conservation initiatives to rely on Federal support. And, typically Federal conservation agency funds cannot be used to purchase land as compensatory mitigation.

There are Federal grant programs that can fund *parts* of conservation programs that include compensatory mitigation other than land acquisition. Regional conservation programs that would access these Federal opportunities in a tight funding environment could benefit by forming inter agency partnerships. Inter agency partnerships can help them to leverage local resources and to gain access to Federal funding sources. Conservation programs also can partner with development agencies to incorporate advanced mitigation in measures in projects eligible for Federal funding grants. Incorporating non traditional local partners—for example transportation agencies— into comprehensive conservation programs often is an effective strategy to access Federal funds.

Categories of federal funding programs that can provide support for regional conservation initiatives include:

1. Resource agency grants that leverage local investments in mitigation to fund comprehensive conservation strategies.
2. Funding from non resource agencies for projects that can include mitigation funding, and under which mitigation inclusion may improve the changes to receive a grant
3. Financing options that can allow agencies to borrow funds in order to purchase land when prices are low and repay the loans when agency revenues are higher.

Resource agency grants

USFWS Grants

The *USFWS Cooperative Endangered Species Conservation Fund*, often referred to as Sec. 6 funds land acquisition grants and species recovery grants that cannot be used for federal mitigation purposes, but can be used to augment locally funded mitigation acquisitions to meet state or local conservation goals. Regional conservation programs can use these funds to complete larger, strategic acquisitions that are beyond the financial reach of the conservation plan organization, but can provide valuable contributions to conservation lands, linkages, and species recovery goals. In some places, a recovery strategy utilizing these funds may be more advantageous than a mitigation strategy.

The USFWS North American Wetlands Conservation Act Grant Program (NAWCA) provides grants to wetlands conservation projects that protect wetlands associated migratory birds. NAWCA is a competitive grant process that requires matching funds from the non federal partner. Similar to Sec. 6 funding, NAWCA funding cannot be used for required mitigation, but can be used for restoration and enhancement of qualifying lands.

The *National Coastal Wetlands Conservation Grant Program (NCWCGP)* dispenses funding to state coastal management agencies to acquire, restore, and enhance wetlands through a competitive grant program. Matching funding can come from state and local governments, private landowners and conservation groups. The required local match decreases if the State and maintains a special fund for acquiring coastal wetlands, other natural areas or open spaces.

Other Resource Agency Grants

Under the *Wetland Program Development Grants (WPDGs),*[3] the EPA provides grants through the state to protect and improve wetlands. These grants cannot fund the purchase of land for compensatory mitigation, but can be used for other expenses associated with a comprehensive wetlands conservation and restoration program, including program planning, identification of mitigation land and land management.

The *Land and Water Conservation Fund (LWCF)*[4] is a Federal grant program administered by Department of the Interior, funded by offshore drilling royalty fees paid by private companies. Grants under the program fund go to state parks departments to set aside land in perpetuity for outdoor recreation through a grant program, and regional conservation programs which include a local parks and recreation agency as a partner are eligible to compete for funding. Local mitigation funding can be the used as the local matching funds required to access this federal grant funding.

Non-resource agency federal funding that can include a mitigation component

Federal grant programs funded by non resource agencies and oriented towards non conservation purposes may consider grant applications that incorporate includes advance mitigation or conservation as an element of a larger project. One example is the Transportation Investment Generating Economic Recovery (TIGER) grant program administered by USDOT. The TIGER grant program incentivizes innovative transportation projects and planning. While there is heavy competition for grants, advanced mitigation is explicitly listed as an eligible use of grant funds. Regional conservation plans can leverage the involvement of transportation agencies to coordinate TIGER grant applications that include advanced mitigation, possibly increasing the competitiveness of the application.

3 https://www.epa.gov/wetlands/wetland-program-development-grants
4 https://www.doi.gov/lwcf

Similarly, conservation programs should look for available grant programs from other federal agencies through which to fund advanced mitigation with innovative partnerships, particularly through programs that include environmental sustainability as a qualifying criterion.

Financing

In addition to grant funding, financing tools are an important element of strategies to achieve advance mitigation, particularly due to the inherent timing issues of relying on gradual mitigation fee revenues to fund large land acquisitions. Financial mechanisms seldom constitute new sources of revenue, and must be repaid with interest. Still, they allow conservation programs to maximize advantageous acquisitions of underpriced conservation land and should be considered as advantageous to advanced mitigation programs.[5]

Transportation-Oriented

Though the *Transportation Infrastructure Finance and Innovation Act (TIFIA),*[6] the USDOT offers Federal credit assistance to nationally and regionally significant surface transportation projects, allowing them to leverage other funds. Project costs covered by TIFIA loans include environmental mitigation, and do not exclude advanced mitigation as an eligible use.

GARVEEs, GANs, and Private Activity Bonds (FHWA)[7] GARVEE (Grant Anticipation Revenue Vehicle) and Grant Anticipation Notes (GANs) consist of securities (debt instruments) issued when money is anticipated from expected Federal aid grants to accelerate transportation projects. These programs allow agencies to borrow money for a project in advance of later receipt of Federal funds for which the project is eligible, and can be used for project based advanced mitigation.

Water Infrastructure Finance and Innovation Authority (WIFIA)

The Water Resources Reform and Development Act (WRDA), establishes WIFIA,[8] a program administered by the EPA and specifically designed to imitate the TIFIA program for wastewater infrastructure. Amounts appropriated for WIFIA financing assistance are allocated jointly to the

[5] Similar programs may exist at the state level. For example, the California State Infrastructure and Economic Development Bank (I-Bank) has an Infrastructure State Revolving Fund (ISRF), which provides direct low-cost loans for public infrastructure. California has a State Infrastructure and Economic Development Bank

[6] https://www.transportation.gov/buildamerica/programs-services/tifia

[7] https://www.fhwa.dot.gov/ipd/fact_sheets/garvees.aspx

[8] https://www.epa.gov/wifia/learn-about-wifia-program

Corps of Engineers and the EPA to loan to eligible projects that could address mitigation requirements.

Cost reduction through inter-agency coordination

While not a source of federal funding, regional conservation programs should also pursue partnerships with Federal agencies that reduce the costs of mitigation—facilitating conservation and environmentally responsible development. Local conservation programs have had some success with regional mitigation in partnership with federal land management agencies—such as the US Forest Service, Bureau of Land Management, and the Department of the Interior—by augmenting existing Federal preserves or contributing funding for land management. Recent efforts integrate renewable energy planning on Federal lands in Southern California shows that this promising avenue to leverage Federal and local partnerships to reduce costs and improve ecological outcomes.

2.b. Charles Landry (Dir., Western Riverside Regional Conservation Authority), *Economic Benefits of Habitat Conservation Plans (HCPs)*.

Are they worth the investment? Most plan implementers would focus on the balance that HCPs bring between the preservation of habitat and certainty in development. But there is a legitimate question, do they provide enough payback for the county, industry or other sponsor to invest the time, effort and money? From the point of view of one of the largest plans in the United States, the answer is a definitive yes! The Western Riverside County Multiple Species Habit Conservation Plan (MSHCP) was adopted in 2004, more than 13 years ago. The MSHCP is huge in terms of size of Plan Area, acres to be preserved, and the number of covered species. The Western Riverside County MSHCP encompasses an area of 1.26 million acres, preserves 500,000 acres in perpetuity, covers 146 species, of which 33 are listed under state and federal law.

First, what do MSHCPs, and their equivalent state plans provide? They expedite ESA compliance at the federal and state levels by providing local control of the permits, and a pre approved process and reserve configuration for habitat protection which expedites permitting.

The success of the Western Riverside MSHCP can be measured in its value to transportation infrastructure, certainty in development, and preservation of habitat and open space. The impetus for the development of the Riverside plan was driven in large part by a need for expedited approval of transportation projects, which had been delayed by the time consuming challenge of working through the Endangered Species Act (ESA). With 33 listed species, there were few areas within western Riverside County that were not impacted by the act. The MSHCP directly addresses these ESA issues by providing advance mitigation for transportation infrastructure.

Prior to the MSHCP, bringing a transportation project forward meant a long planning cycle with the critical path defined by ESA compliance. What has changed? In those 13 years since approval of the plan, two new freeways, eight major freeway interchange projects, and dozens of major highways and arterials have been approved through the MSHCP process without resort to costly, time consuming litigation. A majority of these projects have already been built or are under construction. Many of these projects may have never been built without the plan. These transportation successes are significant and the impact of the plan is measureable. Total transportation investment to date has been over $4 billion.

Amazingly, every regional arterial and highway project in development has been able to move quickly through the MSHCP process. This includes all of the projects of the Riverside County

Transportation Commission, the County of Riverside and all 18 incorporated Cities, as all were identified and are permitted under the plan. The ESA is no longer the critical path for projects within the Plan Area. Most of these regional projects have some federal nexus, thus requiring an expedited Biological Opinion (BO) under the MSHCP. Prior to the plan, this meant a process requiring about a two year average. With the plan, this is an average of two, but no more than three months.

As an example, we can drill down to individual projects. Prior to the plan, the River Road Bridge at the Santa Ana River required four consultations for three species over six years for sediment and debris removal. After the plan was implemented, the consultation for the bridge replacement was three months for the three species.

Three different studies have shown that completion of transportation projects has been accelerated by one to five years due to the MSHCP. These time savings can be translated to actual cost savings by looking at benefits of early delivery. Taking a two year average acceleration of projects, along with Western Riverside's $4 Billion Road Program and the National Highway Construction Cost Index Average for the past eight years of 3.9% per year, we can calculate a savings of $312 million. These savings almost pay for costs of habitat acquisition and management of acquired lands to date.

What is the plan doing for development? Approximately 300,000 acres are in the Criteria Area for covered species, of which approximately 50% must be preserved. These 300,000 acres are a little less than half of the remaining developable land in western Riverside County. The plan is not hard line, but rather requires acquisition of 160 acre criteria cells which meet specific conservation criteria for the plan. So how do we know that the plan is providing certainty for the development community? We can calculate that from the permits approved. 85% of projects are occurring outside the 300,000 acres covered by the Criteria Area. Without the plan, we would expect this percentage outside of the criteria area to be significantly lower, with more development occurring in the Criteria Area and less conservation achieved. The advantage for developers is that outside of the Criteria Area, there are few MSHCP requirements. In some areas there are no MHSCP requirements. This provides certainty for development while assuring that plan objectives are met.

So far, over 58,000 additional acres have been acquired, at a cost of nearly $500 million, to bring the plan total to more than 405,000 acres of the 500,000 acres required. The habitat for 146 species is being managed in accordance with the plan, and the status these species is being actively monitored.

The plan has been incredibly successful for Western Riverside County and continues to enjoy widespread support within the community. Transportation projects are being expedited. Other infrastructure projects are also being expedited, including major power, water and flood control projects. Habitat for species is being preserved and managed successfully. In the end transportation, infrastructure, development and habitat conservation are all winners.

3.) Paul Heberling (USDOT), *Coordination of Transportation and Wildlife Conservation* .

Eco-Logical: Improving Transportation & Environmental Outcomes

Eco Logical has grown in use and awareness since its launch in 2006. Demonstrated by case studies, Eco Logical has helped agencies to strengthen partnerships, decrease permit processing times and cost. The Second Strategic Highway Research Program (SHRP2) Implementing Eco Logical Program has been a major contributor to Eco Logical's success.

What is the goal of the Eco Logical Approach?
To enable agencies to achieve better environmental outcomes through a more efficient transportation planning process. It offers a step by step process that is designed to help agencies engage in early collaboration to establish joint environmental priorities for projects.

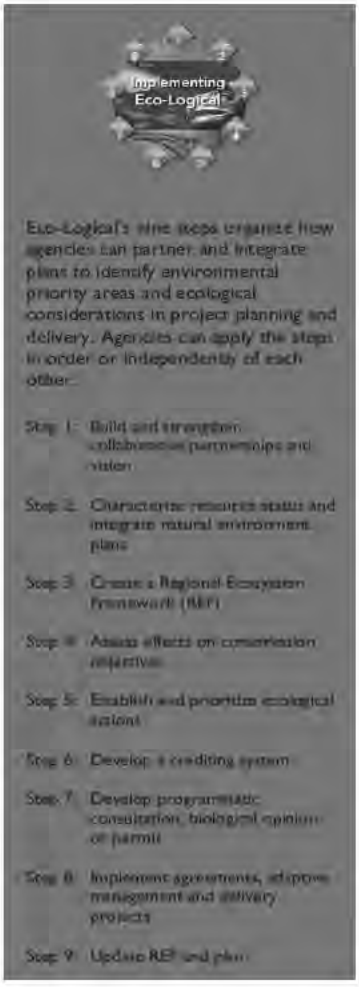
Who has used the Eco Logical Approach?

Thirteen states DOTs and MPOs have used the approach under the SHRP2 Implementation Assistance Program. See page 2 Maine and Michigan examples. Projects summaries can be seen in the Implementing Eco Logical Annual Report .

What is Eco Logical's Future?

As it transitions from being a part of the SHRP2 and based on practitioners' recommendations, the Eco Logical will focus on:

- Promote Eco Logical among senior leadership at transportation agencies, and support agencies in making a business case and demonstrating quantifiable benefits.
- Distribute Eco Logical outreach materials to educate new agency practitioners.
- Providing technical assistance to practitioners about the application of techniques and tools such as Geographic Information Systems (GIS).
- Integrating of Eco Logical into complementary programs, training, and outreach (e.g., PEL, EDC 4).
- Coordinating with other U.S. DOT modes and external partners to adopt the Eco Logical Approach.



Further information is also available at:
https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/default.asp

4.) Douglas Wheeler, Esq. (Hogan, Lovells, Washington, D.C.): PROTECTION AND RESTORATION OF THE CHESAPEAKE BAY: COLLABORATIVE FUNDING TO MEET MULTIPLE CHALLENGES

As befits that Nation's largest estuary, with a vast watershed that extends to six states and the District of Columbia, funding for its restoration and protection is provided through an array of programs at the Federal, state and local levels. NGOs also make a substantial contribution, usually in partnership with one another (the Chesapeake Bay Conservation Partnership) or a government agency.

Water quality has been the primary, but not exclusive, focus of these programs, as degradation due to deposition of nitrogen, phosphorous and silt from adjacent lands is a major concern. Not surprisingly, therefore, the EPA has utilized its **Clean Water Act authority** to establish and fund the Chesapeake Bay Program, in partnership with other Federal agencies, states of the watershed, local governments and Bay-based NGOs, like the Chesapeake Bay Foundation and the Chesapeake Conservancy. Beginning in 1983 with the Chesapeake Bay Agreement, these parties have implemented a multi-faceted strategy to protect Bay lands and waters, now including Total Maximum Daily Loads (TMDLs) of offending pollutants in each state. States are required, in turn, to use locally-relevant tools for achieving this "Federal pollution diet" by means of individual Watershed Implementation Programs. To ease this burden, EPA provides funding through the **Chesapeake Bay Program Office** to participating states, local governments and NGOs. Nearly two-thirds of its annual appropriation ($73 million in FY 2017) takes the form of such grants. Other Federal partners, like the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Forest Service have Bay programs of their own, all coordinated through the Bay Program to achieve common objectives. The National Park Service, for instance, sponsors and funds a modest **"Chesapeake Gateways"** program, making small grants to NGOs which work to improve recreational access, environmental literacy and cultural awareness. On a larger scale, Federal land managers within the watershed have cooperated to develop a Conservation Collaborative under auspices of the Department of the Interior. This "Great Rivers of the Chesapeake" proposal, incorporating 12 rivers which are tributaries of the Bay, recognizes and funds the Bay-specific land acquisition priorities of each participating agency. Although such Collaborative proposals are dependent on the vagaries of appropriations from the **Land and Water Conservation Fund**, the "Great Rivers" initiative has thus far resulted in substantial funding for land acquisition within the watershed by the Park Service, the Fish and Wildlife Service and the Forest Service.

As noted, the burden for compliance with Federal TMDLs and other Bay Program objectives falls primarily on states within the Chesapeake Bay watershed, including New York, Pennsylvania, Maryland, Delaware, West Virginia, Virginia and the District of Columbia. Each of these state partners has adopted programs by which to fund its obligations under the Program, but arguably none has been more

imaginative and far-reaching than Maryland. Established in 2004, the **Chesapeake Bay Restoration Fund** is comprised of receipts from a much-maligned "flush tax" of five dollars monthly from households which rely on one of 66 wastewater treatment plants within the watershed. Reasoning that sewage and storm water run-off are the most readily controlled "point sources" of water pollution in the Bay, the State makes grants for water quality improvements at each of the non-complying treatment plants. Recently, the State has sought to enhance the purchasing power of these tax dollars by permitting municipalities to engage in **compensatory mitigation** through reliance on third party mitigation bankers, and by inviting **least cost bids** for reductions in pounds of phosphorous and nitrogen. **Program Open Space** is a land-acquisition counterpart of the Restoration Fund. Receipts from a one-half percent real estate transfer tax, on the order of $30 million annually, are used to acquire wildlife habitat and open space within the watershed. A State-chartered land trust, the **Maryland Environmental Trust**, is the principal recipient of these funds.

Agriculture, while an important element of regional economies, is also an heretofore intractable source of non-point pollution. Contaminated runoff from farms on Maryland's Eastern Shore, for example, has long contributed to diminished water quality in the Bay. While improved farming practices such as conservation tillage, buffer strips and reduced applications of fertilizers and pesticides have helped, the states have yet to find a fully effective strategy to control non-point source pollution. Unlike the controls which are now in place for point-source polluters, such as waste treatment plants, the sheer number of non-point sources and the relatively small size of each have made it difficult to reduce agricultural runoff. All states, including Maryland, have adopted legislation to establish **market-based nutrient trading programs**, but none is yet fully operational. Under these programs, a farmer or group of farmers is able to sell on the open market that increment of nutrient runoff which is the difference between his actual usage, occasioned by the adoption of best management practices, and the amount permitted by law. Conversely, the farmer whose runoff exceeds the allowable limit can purchase needed "credits" to offset his overage. Two innovations may help to realize the potential of nutrient trading: the advent of precise metering to measure runoff on individual farms, and third-party aggregation of credits, to facilitate sales of credits at market-making volumes. After **in-state markets** have been established, there will be the possibility of **intra-basin transfers**, much as EPA has characterized its quest for water quality as a basin-wide initiative.

The plethora of funding alternatives within the Chesapeake Bay watershed, including increased reliance of market-based strategies and private incentives, indicates that no one funding strategy can or should be relied upon to achieve regional environmental goals. Rather, the Chesapeake experience suggests a need for sustained collaboration in the pursuit of common goals, and strong public support of exacting environmental standards at all levels of government.

5.) Myles Culhane (Occidental Petroleum), *Pacos Watershed Conservation Initiative*.

Occidental Petroleum Partners with National Fish and Wildlife Foundation in $7 Million Effort to Boost Conservation in the Permian Region

On November 9, 2017, the National Fish and Wildlife Foundation (NFWF) announced that Occidental Petroleum and five other oil and natural gas companies with significant operations in the Permian Basin of Texas and New Mexico had formed a new partnership to support conservation in the region. The Pecos Watershed Conservation Initiative ("PWCI") will identify significant conservation opportunities that improve habitat, address water scarcity, improve water quality and engage local communities.

This unprecedented strategic partnership will support proactive conservation efforts in the Permian Basin and demonstrates that industry and government can work closely together to both encourage responsible business development and to ensure that vital conservancy goals are achieved.

I. OVERVIEW

The PCWI is designed to award grants to restore and sustain healthy rivers, streams and grassland systems that provide important wildlife habitat in the Pecos watershed and adjacent areas of New Mexico and Texas. Up to $1.7 million will be available in 2018. Major funding is provided by the U.S. Department of Agriculture's Natural Resources Conservation Service and six corporate partners, Anadarko Petroleum, Chevron, Noble Energy, Occidental Petroleum, Shell Oil and XTO/Exxon Mobil Energy.

Grants will be awarded in two categories: Habitat Restoration and Species Information. Initial program priorities include habitat restoration strategies, specific river and grassland focal areas, and wildlife species of interest. Projects must address at least one of these priorities to be eligible for consideration.

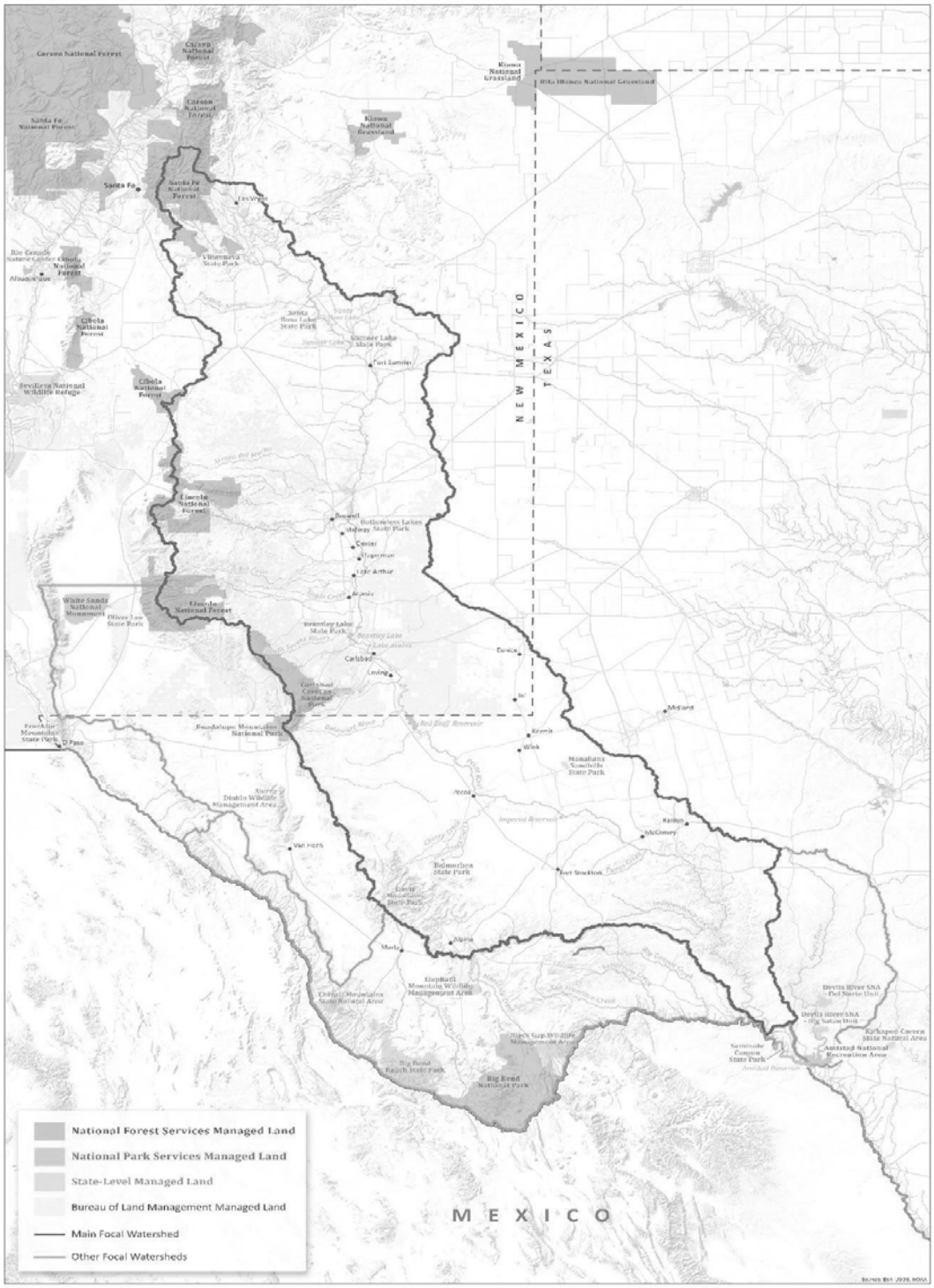
II. GEOGRAPHIC FOCUS

The PWCI covers a vast area of the United States' southwest region as shown in the Figure One, which shows the entire Pecos watershed in the bold red line, with additional related watersheds outlined in thin red. Those additional watersheds have been added to address the fact that species of interest may range into those watersheds and specific conservation opportunities may exist in areas outside of the Pecos watershed itself.

Several specific areas have been identified as priorities for initial conservation work in the region. These include:

- Delaware River and Black River watersheds, and other tributary streams that flow from the Guadalupe and Davis mountains

- Pecos River above Red Bluff Reservoir



Pecos Watershed, Primary and Secondary Focal Areas

- Pecos River below the confluence with Independence Creek
- Large grassland areas including the Alpine/Marfa/Marathon, Texas areas, Otero Mesa, and BLM managed rangelands in New Mexico

III. FORMATION OF THE PWCI

The PWCI is the end product of nearly two years of conversation between Occidental Petroleum and NFWF that began in December of 2015. It is helpful to understand the larger context of Occidental's conservation efforts to understand our enthusiasm for this effort.

Occidental has a history of partnering with local community organizations and state wildlife agencies to craft conservation agreements that benefit the species and landscapes in the regions the company operates. Nearly twenty years ago, Occidental entered into a partnership with the Colorado Natural Areas Program to conserve the parachute penstemon, a plant species endemic to western Colorado with 60% of its habitat occurring on surface Occidental held in fee. Approximately ten years ago, Occidental enrolled in Section 10 conservation agreements (a Candidate Conservation Agreement (CCA) for federal lands and a Candidate Conservation Agreement with Assurances (CCAA) for private lands) to conserve habitat for the dunes sagebrush lizard in Texas and New Mexico.[9] In 2012, Occidental worked with the Western Association of Fish and Wildlife Agencies and the FWS to piece together agreements, both a range wide conservation plan and a CCAA to conserve habitat for the lesser prairie chicken in Texas, New Mexico, Oklahoma and Kansas (and a small habitat in Colorado).

These agreements include certain common elements. Each is voluntary, in each Occidental commits to certain conservation measures when using its properties and each includes some degree of access and oversite by a program administrator. In addition, and with the exception of the parachute penstemon, in each agreement Occidental pays both an enrollment fee to enter the agreement and then an impact fee in advance of development. In return, Occidental receives certain assurances, again with the notable exception of the parachute penstemon, in the form of an enhancement of survival permit from the Service.[10] In the case of the dunes sagebrush lizard and lesser prairie chicken Occidental received assurances

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[9] Pursuant to Section 10(a)(1)(A) of the Endangered Species Act, non-Federal property owners, who through a Candidate Conservation Agreement with assurances commit to implement conservation measures for a proposed or candidate species or a species likely to become a candidate or proposed in the near future, will receive assurances from the Services that additional conservation measures will not be required and additional land, water, or resource use restrictions will not be imposed should the species become listed in the future. These assurances are provided in the property owner's Agreement and in an associated enhancement of survival permit issued under section 10(a)(1)(A) of the Act.

[10] In the case of the parachute penstemon, the agreement informed FWS's decision on the extent of a critical habitat designation, the final designation did not include Occidental's surface. *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Ipomopsis polyantha (Pagosa skyrocket), Penstemon debilis (Parachute beardtongue), and Phacelia submutica (DeBeque phacelia)*, 77 Fed. Reg. 48368, 48373 (Aug. 13, 2012).

in the form of an enhancement of survival permit, issued to the permit holder, that as an enrollee, Occidental would not be liable for take under the ESA where it was compliant with the terms of the conservation agreements. In addition, no additional conservation requirements beyond those included in the CCAA could be imposed on Occidental without its consent.

Development of a section 10 agreement takes a great deal of time, resources and effort, in each CCA/CCAA Occidental has entered, the process has taken in excess of 18 months. This creates significant difficulties given the time frames for listing under the ESA. In addition, the agreements each dealt with a single species (although it is possible to have an agreement covering multiple species, the agreements Occidental has entered were often initiated by the threat of a listing of a particular species and they addressed a single candidate species). The prospect of repeating these efforts for the dozens and sometimes hundreds of species that Occidental shares the landscape with is daunting. Finding funding and willing partners can also prove to be a challenge. In addition, while the prospect of a section 10 permit is attractive, it does not necessarily guarantee a certain outcome for species proposed to be listed. The lack of certainty can prove frustrating for a corporation. Further, the agreements themselves risk being so costly to administer as to reduce the funds devoted to conservation to less than desirable levels.

Furthermore, Occidental senior management thinks of these agreements as investments not only from a regulatory outcome perspective but from a conservation outcome perspective. Increasingly, my CEO and her direct reports were asking if the investment Occidental was making for conservation was achieving benefits for the species. Contemporaneously, company shareholders were asking questions about Occidental's efforts to minimize its environmental footprint.

It was also during this time that the Western District of Texas vacated the listing of the lesser prairie chicken[11] citing the Service's failure to follow its own rule for evaluating conservation efforts (Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE)).[12] While rightfully decides, this decision accentuates the importance of PECE and helped inform Occidental's future approach to conservation. Since PECE requires the Service to evaluate all conservation efforts, for Occidental it may be preferable to shift greater focus to obtaining conservation results that support a decision by the Service on whether to list rather than obtaining a section 10 permit.

[11] *Permian Basin Petroleum Ass'n v. DOI*, 127 F. Supp. 3d 700 (W.D. Tex. 2015). This case was decided on summary judgment that found for the Service on two other issues: (1) whether FWS cited/explained a rational decision to list the LPC as a threatened species based on the best scientific evidence available; and, (2) whether FWS responded to significant and highly relevant comments raised by Plaintiffs.

[12] The PECE requires a two-part (15 criteria) analysis. In the first part, the Service must evaluate whether the formalized conservation effort will be implemented. In the second part, the Service must evaluate whether the conservation effort will be effective.

So, two and a half years ago I began having conversations both internally at Occidental and with industry colleagues about what we were really trying to accomplish with these conservation agreements and whether we were achieving our goals. I wanted to be able to provide a positive assessment for our CEO and senior management that Occidental's investment in conservation was producing measureable uplift for a species and its habitat. I also needed to find more funding in a more difficult operating landscape.

It turned out that there were several oil and gas industry professionals that were puzzling over the same issues and NFWF was looking for creative partnerships to invest in landscape scale conservation. This came together in early 2016 at a Western Governors' meeting where I met with NFWF representatives and first described conservation opportunities in what I think of as the underappreciated landscape overlying the Permian Basin. Additional conversations grew out of these meetings and a concept began to take form.

The basic concept is:

- Occidental Petroleum cares about its relationships with the Permian – the people that live and work there and the environment;
- Our shareholders care about the commitment to Permian and sustainable operations
- These communities believe that companies can provide responsible economic development;
- NFWF is a credible and experienced organization that can help committed companies partner with others that seek positive conservation outcomes and bring matching funds to the table;
- NFWF can secure matching funds, often on a 3:1 basis, maximizes conservation actions;
- Regardless of the administration, a commitment of this nature is favorably perceived;
- Positive conservation outcomes will inform regulatory decisions made pursuant to the ESA;
- Section 10 permits have value but are only one part of the calculus companies like Occidental make when choosing to champion certain conservation efforts; and,
- In a region like the Permian Basin, it is possible for several companies to pool resources to meet necessary funding levels.

The resultant concept combines Occidental's experiences of partnering with several like minded companies to enter into a conservation agreement and NFWF's experience working with federal, state and non profit entities to fund and conduct conservation work. There is no section 10 permit but NFWF provides a level of credibility to the effort that is critically important to Occidental and the industry partners.

The result is a novel partnership for NFWF. Previously, NFWF would partner with a single corporation that had a particular conservation issue it wished to address. Thus, NFWF has a long history of working with the Southern Companies in the southeast, Walmart, and International Paper. The challenge in this case was getting NFWF to be comfortable partnering with a group of companies that would pool funding that would provide the seed money for the initiative. Part of that effort required educating NFWF on the long standing commitment Occidental and other companies have shown for conservation agreements. NFWF set a target for seed money commitment for the first three years of $1 million. Through my relationships with my colleague Nick Owens with Anadarko, I was able to reach $2 million commitment, two thirds of the way to the target.

NFWF then offered to schedule a meeting with Shell Oil. This proved crucial. Shell Oil has a 20 year experience working with NFWF on multiple initiatives across the United States. At a meeting held at Shell's offices, I presented the concept and spoke of the commitment from Occidental and Anadarko and why it was important to the Permian landscape. This meeting focused on the conservation opportunities and shared values, there was no discussion of permits or CCAA's. By the time I left Shell's campus, Shell's commitment had been secured. Eventually, Chevron, Noble Energy and XTO/ExxonMobil joined in the PWCI to provide additional funding above the target level.

With participation secured, a formal proposal was presented to the NFWF board in mid 2017 and approved. A copy of the Pecos Watershed Initiative – Proposal is attached along with the final proposal is attached along with a fact sheet describing the final approved project, the Pecos Watershed Conservation Initiative. A kickoff meeting was held in Austin, Texas, in fall of 2017. On December 21st, NFWF completed the first Request for Proposals for the Pecos Watershed Conservation Initiative. A copy of the 2018 Request for Proposal is also attached. Twenty three complete applications were received, seeking $4 million in funding for the $1.7 million available in this initial round. The proposals and ranking criteria will be sent to all funding partners, the six corporations and NRCS Texas and NRCS New Mexico, for review with a meeting in mid January 2018 to make funding recommendations to the NFWF Board. Applications cover both states, grasslands and riparian projects and a diverse set of nonprofit, government and university applications.

Significant challenges remain. The landscape is vast given the current funding levels. Positive conservation benefits can be realized and obtained on individual projects but uplift for the watershed will likely require many years, if not decades, of commitment. Industry funding availability may also depend greatly on oil prices and development outlooks. The industry partners are large corporations and the initiative takes advantage of NFWF fund matching

capability, however, a prolonged drop in crude oil prices may jeopardize future funding commitments.

For more information, visit http://www.nfwf.org/swrivers/pecos/Pages/home.aspx.

Note: the following Briefs are yet to be received and will be included in the final Session Outline if and when received.

6.) Keith Greer (SANDAG**),** ***SANDAG Advance Mitigation Program and Proposed Improvements***.

7.) Tomer Hasson (TNC) ***Advance Landscape-level Mitigation Programs***.

To be presented, remotely, during the Session:

8.) Jim Murley (Miami Dade Resiliency Officer). Collaborative Conservation/Water/Resiliency Planning and Funding in South Florida ***(Everglades, South Florida).***

9.) David Willms (WGA): ***Perspectives From the WGA Effort.*** *(yet to be confirmed)*

10.) Dennis Grossman (COPR), ***AB 2087: Regional Conservation Considerations and Funding.***

Eco-Logical: Improving Transportation & Environmental Outcomes

Eco-Logical has grown in use and awareness since its launch in 2006. Demonstrated by case studies, Eco-Logical has helped agencies to strengthen partnerships, decrease permit processing times and cost. The Second Strategic Highway Research Program (SHRP2) Implementing Eco-Logical Program has been a major contributor to Eco-Logical's success.

What is the goal of the Eco-Logical Approach?

To enable agencies to achieve better environmental outcomes through a more efficient transportation planning process. It offers a step-by-step process that is designed to help agencies engage in early collaboration to establish joint environmental priorities for projects.

Who has used the Eco-Logical Approach?

Thirteen states DOTs and MPOs have used the approach under the SHRP2 Implementation Assistance Program. See page 2 Maine and Michigan examples. Projects summaries can be seen in the Implementing Eco-Logical Annual Report .

What is Eco-Logical's Future?

As it transitions from being a part of the SHRP2 and based on practitioners' recommendations, the Eco-Logical will focus on:

- Promote Eco-Logical among senior leadership at transportation agencies, and support agencies in making a business case and demonstrating quantifiable benefits.
- Distribute Eco-Logical outreach materials to educate new agency practitioners.
- Providing technical assistance to practitioners about the application of techniques and tools such as Geographic Information Systems (GIS).
- Integrating of Eco-Logical into complementary programs, training, and outreach (e.g., PEL, EDC-4).
- Coordinating with other U.S. DOT modes and external partners to adopt the Eco-Logical Approach.

Eco Logical's nine steps organize how agencies can partner and integrate plans to identify environmental priority areas and ecological considerations in project planning and delivery. Agencies can apply the steps in order or independently of each other.

Step 1: Build and strengthen collaborative partnerships and vision

Step 2: Characterize resource status and integrate natural environment plans

Step 3: Create a Regional Ecosystem Framework (REF)

Step 4: Assess effects on conservation objectives

Step 5: Establish and prioritize ecological actions

Step 6: Develop a crediting system

Step 7: Develop programmatic consultation, biological opinion, or permit

Step 8: Implement agreements, adaptive management and delivery projects

Step 9: Update REF and plan

Further information is also available at:
https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/default.asp

A DIALOGUE ON THE FUTURE OF

Habitat Conservation Planning

AUGUST 2016

A Report by:

THE CENTER FOR COLLABORATION IN GOVERNANCE

Based on a multiple session dialogue co-convened with

THE CENTER FOR LAND, ENVIRONMENT, AND NATURAL RESOURCES, UNIVERSITY OF CALIFORNIA, IRVINE SCHOOL OF LAW ("CLEANR")

Prepared for publication by:
PLACEWORKS

REPORT BY THE

CENTER FOR COLLABORATION IN GOVERNANCE

ASSISTING PUBLIC AND PRIVATE AGENCIES AND INTERESTS TO COLLABORATIVELY INNOVATE IN CREATING THE FUTURE.

ACKNOWLEDGEMENTS AND MAJOR CONTRIBUTIONS

The primary rapporteur with respect to this Report has been Lindell Marsh, Executive Director of CCG, while the facilitators of the Dialogue sessions also included Alejandro Camacho, Director and Elizabeth Taylor, Staff Attorney, Center for Land Use, Environment and Natural Resources at UCI Law ("CLEANR[1]") ; Timothy Male, Associate Director for Conservation and Wildlife, White House Council on Environmental Quality; and Martin Wachs, PhD, Distinguished Professor, Emeritus, University of California (who also contributed significantly to the funding and finance portions of this Report);

And with major contributions to the Dialogue Sessions and, in turn, to this Report from:

Edward Boling, *Deputy Solicitor for Parks & Wildlife*, U.S. Department of the Interior and, currently, *Deputy General Council*, White House Council on Environmental Quality;

Dennis Grossman, *Senior Advisor*, Environmental Science and Policy, California Strategic Growth Council;

John Hopkins, Ph.D., California Coalition for Habitat Conservation (with respect to the experience and concerns of the Coalition);

Susan Hori, *Partner*, Manatt, Phelps and Phillips LLP;

Jaimee Lederman, *Attorney and Ph.D. candidate*, Luskin Center for Public Policy, UCLA (particularly with respect to funding and finance);

Ya-Wei Li, *Senior Director of Endangered Species Conservation*, Defenders of Wildlife;

Jim Lyons, *Deputy Assistant Secretary*, Land and Minerals Management, Department of the Interior;

Timothy Male, *Associate Director for Conservation & Wildlife*, White House Council on Environmental Quality;

Therese O'Rourke Bradford, *Area Manager*, Bureau of Reclamation;

Lynn Scarlett, *Managing Director*, Public Policy, The Nature Conservancy;

James R. Strittholt, *President and Executive Director*, Conservation Biology Institute;

Douglas P. Wheeler, *Partner,* Hogan Lovells - US, LLP; and,

David Zippin, *Vice President*, ICF

Prepared for Publication by Placeworks

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Purpose:

PURPOSE

In July, 2015, 32 key staff of interested federal and State agencies, public and private "stakeholders," and academic researchers, gathered for a "conversation" on the Future of Habitat Conservation Planning (HCP), hosted by the President's Council on Environmental Quality (CEQ), in collaboration with the Center for Land, Environment and Natural Resources (CLEANR) at University of California, Irvine School of Law (UCI Law) and the Center for Collaboration in Governance (CCG).

This conversation was the most recent in a series of four dialogue sessions convened by CLEANR and CCG on the Future of Habitat Conservation Planning (HCP Dialogue). In addition to the CEQ "conversation", sessions were held in Sacramento, California (December 2014) and at UCI Law (February, 2014 and December, 2015). Ancillary to these sessions, smaller meetings and interviews on related topics were held in Washington, D.C., including meetings hosted by the Environmental Law Institute (ELI) focused on multi-agency permitting coordination, and with USDOT, FHWA and AASHTO (all acronyms are defined on page 11) focused on advanced landscape-level wildlife habitat mitigation/conservation in concert with infrastructure development.

This Report is a synthesis view of the HCP Dialogue to date based on the sessions convened, interviews, contributions and related research.[2] A list of those participating in the four sessions of the HCP Dialogue is included in Appendix A.

ACRONYMS

- **AASHTO**: American Association of State Highway and Transportation Officials.
- **BLM**: Federal Bureau of Land Management
- **CDFW**: California Department of Fish and Wildlife
- **CEQA**: California Environmental Quality Act
- **CWA**: Federal Clean Water Act
- **CZMA**: Federal Coastal Zone Management Act
- **DOI**: United States Department of the Interior
- **DRECP**: Desert Renewable Energy Conservation Plan
- **EPA**: United States Environmental Protection Agency
- **ESA**: Federal Endangered Species Act
- **ITP**: Incidental Take Permit under ESA, Section 10(a)
- **FHWA**: Federal Highways Administration
- **FLPMA**: Federal Land Policy and Management Act (Pub.L. 94 579) regarding federal lands managed by BLM)
- **HCP**: Habitat Conservation Plan
- **LLC**: Landscape Conservation Cooperatives
- **MBTA**: Migratory Bird Treaty Act
- **NCCP:** California Natural Community Conservation Plan
- **NEPA:** National Environmental Policy Act
- **SAMP**: Special Area Management Plans under CSMA and CWA
- **USACE**: United States Army Corps of Engineers
- **USDA:** United States Department of Agriculture
- **USBR**: United States Bureau of Reclamation
- **USDOT**: United States Department of Transportation
- **USFS:** United States Forest Services
- **USFWS**: United States Fish and Wildlife Service
- **USGS:** United States Geological Survey

Executive Summary:

This report tells the story of what we have learned from the four dialogue sessions convened over the past two years.

HISTORY

The first HCP was approved more than 30 years ago in March, 1983. It addressed the "ecological community" of the 3,000 acre San Bruno Mountain area and concerns regarding potential urban development on its slopes. Since that time, HCPs have become the major approach for local, state and federal agencies, together with public and private interests, to collaborate in addressing wildlife conservation in concert with development. As the concept matures, it is outgrowing the ad-hoc manner in which such plans have been crafted, funded and managed (in relation to other plans and regulatory programs). This Dialogue, and the Report below, focus on innovative next steps in the furthering this concept and way of working.

LARGE SCALE CONSERVATION

HCPs have been utilized to support single project incidental take permits. However there are now more than 25 million acres across the nation covered by large-scale or area-wide HCPs (either completed or in process), providing for the conservation of hundreds of species. These include urbanizing areas in California, Texas, Florida, and Washington: timberlands in the Pacific Northwest; inter-state utility lines in the Midwest and eastern States; renewable energy projects (22.5 million acres in the California Desert alone); fly-ways in the Midwest; and major river-ways (the Colorado and the Santa Ana). These are in addition to multi-state plans and conservation efforts such as those relating to the Chesapeake Bay and its watershed, the South Florida Ecosystem Restoration Project and plans to address concerns related to the conservation of the Greater Sage-Grouse (see Case Studies in Chapter 3).

APPROACH

The conceptual elements of the HCP approach are:

- a geographic plan, collaboratively developed by those from the constituency of affected agencies and interests; and,
- an accompanying implementation agreement (IA), providing the basis for multi-agency regulatory approvals and permits (including, e.g., incidental take permits (ITPs) issued by USFWS under Section 10(a) of the ESA and, where applicable, state regulations.

Above: *Infrared image looking over San Bruno Mountain to the San Francisco Bay.*

San Bruno Mountain Habitat Conservation Plan (HCP): the "model HCP multi-angency/interest effort to conserve "ecological communities" in concert with anticipated deveopment.

--H.R. Rep. No 997-835 (1982), U.S.C.C.A.N. 2807, 2830.

Above left: *Mission Blue butterfly (Plebejus icarioides missionensis)*

Above right: *Calippe Silverspot butterfly (Speyeria callippee callippee).*

Images of Endangered butterflies protected by the San Bruno Mountain HCP.

Above: *Hooper's Island*
Blue Heron Hiding in Chesapeake Bay Watershed HCP
Photo source: Chesapeake Bay Program

FRAMEWORK

Moving beyond the ad-hoc application of the HCP concept, six elements are called for:

1 | Early broad-scale (statewide) science and mapping focused on eco-regions and systems, in anticipation of possible future infrastructure, development, and other human effects, and with a view of identifying species, habitats, areas, and foci of state-wide and regional ecological concern (that will provide information in support of more focused efforts, e.g., areas of critical concern or anticipated areas of anticipated conservation or development);

2 | Regional scoping of the conservation of eco-systems in anticipation of possible development and taking into consideration other concerns such as population growth, air quality (including climate change), transportation, and water, food, and energy supply.

3 | Early establishment (ideally at the State/federal level) of information/mapping systems regarding State and regional eco-systems in relationship to anticipated infrastructure and development, together with the identification of areas calling for a next, more focused, level of planning - with participation by affected agencies and interests.

Above: *Florida Panther*
The Florida Panther habitat was preserved by efforts by the South Florida Ecosystem Restoration Task Force
Photo source: South Florida Water Management District

4 | Early landscape-level land acquisition and conservation (together with advance mitigation) prior to institutional or physical changes that would result in the further fragmentation of land ownership or use or in the inflationary affects of anticipated development;

5 | Early funding and financing mechanisms (for early science and mapping and the acquisition of habitat and conservation lands) with the development of mitigation banks and credit pools to, in part, expedite and contemplate infrastructure, development and other human activities; and,

6 | Increased collaboration among affected "silo-like" agencies and interests, and the exploration and implementation of the principles and processes, made possible by information technology, that make such collaborations work e.g., dialogue and the use of scoping, pilots and models.

These "elements" may be part of a broader overarching framework (by agreement among State/federal agencies, and others) or may be developed as "tools" in support of conservation efforts, including HCPs. These elements will make HCPs more effective and efficient (reducing costs and time required for the implementation of infrastructure and other development) - allowing us to focus on other priorities.

Chapter One: Introduction

THE CHALLENGE

A powerful image emerged from the HCP dialogues. In the late 1900s, Northern California experienced the "battle of the inland sea"[3] in which towns and farmers fought against the floodwaters flowing off the northern Sierras that inundated their communities and cultivated lands. Initially, in an ad-hoc manner, one levee was built at a time and then several and finally, programmatically, a whole system of levees and waterways were constructed -- with State and federal participation and support. It was the same story with wells and canals to provide water in support of agriculture in the San Joaquin Valley and urban development in Southern California. Initially farmers sunk wells one-by-one and diverted streams, until finally, they came together with the State and federal governments to programmatically build one of the most advanced flood control and water distribution systems in the world. The result is the world's most abundant breadbasket and one of the foremost economic engines in California.

Of course, there is a significant difference between these efforts and those discussed below. The difference is that the Northern California efforts focused on development and "infrastructure": dikes, levees and channels, with little, if any, consideration of wildlife habitat. The Northern California effort proceeded without the appreciation that such development may have led to overdevelopment, the loss of habitat, (including the loss of an entire ecosystem, e.g. the Owens Valley) and the very need for the ESA (with its focus on the conservation of "threatened" and "endangered" species).

Clearly, there is significant change afoot. We as a country have become increasingly concerned about wildlife and eco-system conservation and, in the spirit of the first HCP, are focused on addressing the need for such conservation in concert with infrastructure, development and other human effects at the local, State and federal levels.[4] Further, there are increasing and related concerns regarding our growing population, air quality (including the effects of climate change) and the availability of energy, food and water, all summarized as a concern for "sustainability".

Some have suggested that conserved habitat or eco-systems can be viewed as "infrastructure"; however, this may not be quite right. Concerns regarding conservation and sustainability tend to be cautions and predictably will be viewed increasingly together with proposed development. In this light, the first HCP and others that followed can be viewed as early pioneering efforts of an increasingly "programmatic" practice, but one that has been narrowly focused (that is, focused on the reconciliation of wildlife and eco-system conservation with human development and activities). This has been an important step, but it is important to keep in mind that we are modeling approaches that may be called for in the future to address other aspects of "sustainability". Key benefits of this practice include greater flexibility and increased coordination and collaboration among local, State and federal agencies and interests, utilizing common, flexible, multiple party agreements to provide coordination and assurances for both the public and private sectors, resulting in greater sustainability, efficiency and predictability for all.

The evolution of the Northern California efforts to manage storm water provides the proper perspective that is: innovatively working together programmatically

As a Nation, we have a growing concern regarding wildlife and eco-system conservation in relationship to anticipated population growth, infrastructure development, and "sustainability" and "resiliency".

and collaboratively to further evolve and create efficient and effective governance frameworks, institutions and practices that further mutual well-being.

We are supported in this work by our developing information technology and systems. This has allowed us to shift our focus from quasi-judicial permitting processes (involving full blown proposals and a myriad of individual agency "judgments") to multi-agency/interest planning processes in which information is coordinated and shared among the various agencies and interests involved in the scoping of alternatives, impacts and effects and the development of common plans.

We are also increasingly addressing such eco-system conservation and development concerns together and early. As a result, we can anticipate more up-front costs (e.g., early large-scale research, mapping, planning and habitat acquisition), and longer-term net-benefits. And, as we pioneer this approach, we can anticipate encountering narrowly focused silo-like agencies and private and public interests, often understaffed, with constrained budgets (that do not reflect a shift in the application of funds) and challenged with adjusting to this new way of working (with immature principles, protocols and procedures). This poses a significant institutional challenge.

How do our institutions evolve to provide for the shift way from stove-pipe regulatory processes toward more integrated planning models that efficiently reconcile not only eco-system and development concerns, but also address other concerns related to sustainability generally?

In addressing landscape-level eco-system conservation and development together…we can anticipate increased up-front costs…[and] encountering narrowly focused silo-like agencies and private and public interests, often understaffed, with narrowly constrained budgets and perspectives.

LOOKING BACK AND FORWARD

The San Bruno Mountain HCP was a collaborative effort to reconcile development and wildlife conservation (the "ecological community") and included local, State and federal agencies, as well as development and environmental interests. It provided the "model" for Section 10(a) of ESA, providing for permits for the incidental take of federally-listed threatened and endangered species (ITPs).[5] And, while most HCPs that followed have focused on individual applicants and single species, there has been a growing trend toward focusing more broadly to address area-wide concerns. In addressing the ecological community, it addressed more than 50 "Species of Concern". Some recent HCPs have focused on more than 140 species and areas that span multiple states and millions of acres. (See Figure 1.1 and Appendix B.)

Below: *San Bruno Mountain Ridge Trail.* The San Bruno Mountain HCP area covers the San Bruno Mountain south of San Francisco and within the cities of South San Francisco, Daly City, Colma, and Brisbane

Photo source: County of San Mateo, CA Parks Department

In addition to the historic focus of HCPs on wildlife concerns underlying the ESA and, recently, the MBTA (also within the jurisdiction of USFWS), with an appreciation that beyond these measures and with the exception of federal lands and waters, the regulation of wildlife conservation has been a State function that has been delegated, in large measure, to local agencies. Further, while HCPs have focused on federally-listed species, they have also provided the basis for State and local regulation (e.g., the California NCCP) with respect to wildlife and wildlife habitat and are beginning to be coordinated with federal permitting under the CWA (see Chapter 3). And, as they grow in scope, there are questions as to how they relate to other federal and state programs (e.g., FLPMA, USACE and USBR watershed plans and SAMPs and various State programs such as those focusing on wildlife, the environment, sustainability and infrastructure development).

Above: *Townsend's Big-Eared Bat*
A protected species in the California Desert Rewable Energy Conservation plan.

Photo source: the Bureau of Land Management / Desert Renewable Energy Conservation Plan

TERMINOLOGY: "HCP," "MSHCP," "AREA-WIDE HCP"

With the expanded application of the HCP concept, questions arise as to terminology and classification. Generally, the development of a HCP is comprised of three elements: (i) a geographically focused, habitat conservation plan collaboratively prepared by a group of affected local, State and federal agencies and, in some cases, interests; (ii) an implementation agreement; and, (iii) on-going conservation as contemplated by the conservation plan. This idea was a paradigm shift in that it envisioned that the plan and agreement would be developed collaboratively and coordinated with related CEQA/NEPA processes, providing the basis for separate agency permits and approvals. This replaced the multi-agency, in-seriatim permitting process, contemplating separate (often conflicting) agency-by-agency permit conditions and was intended to provide assurances equivalent to "development agreements" which had then been authorized under various state legislation.

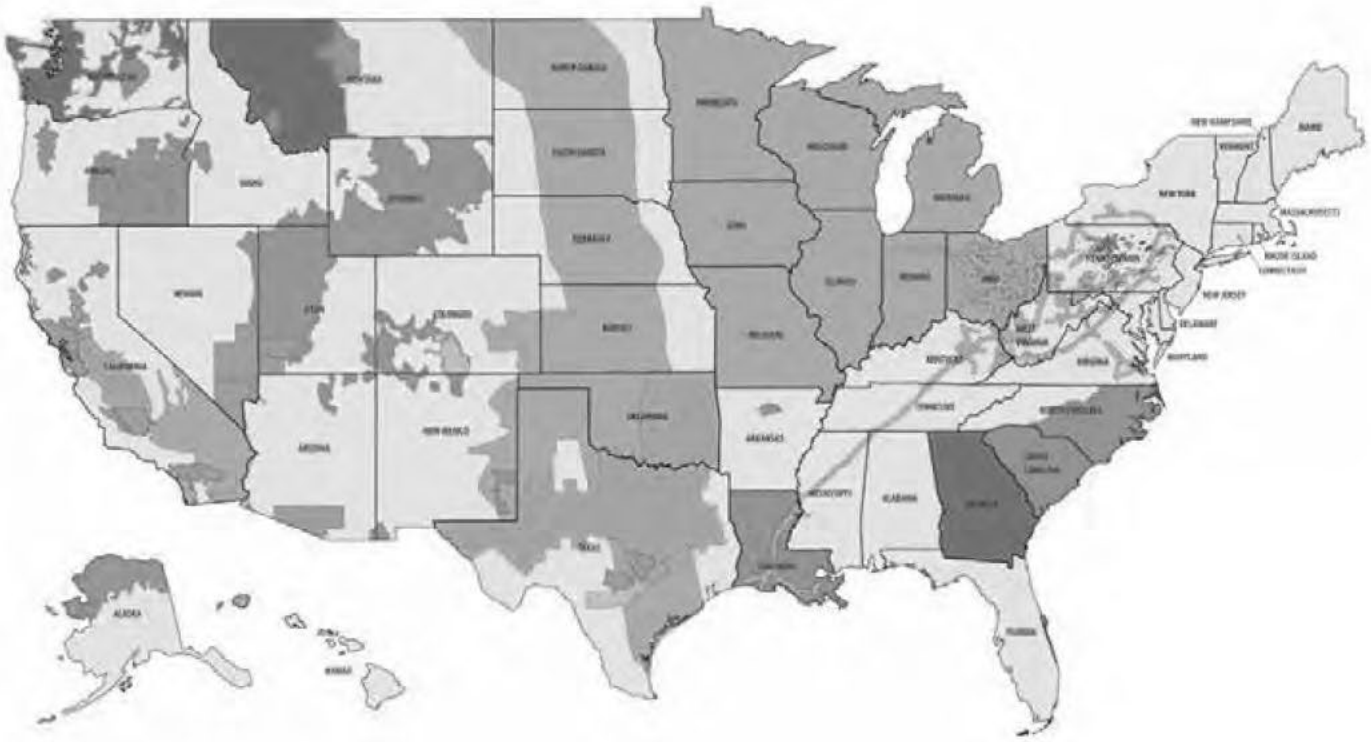
While the San Bruno Mountain HCP was the model and covered a number of "species of concern" within the plan area, many of the HCPs that followed focused on single species, a single project and a relatively small parcel of land - essentially a federal ITP with conditions. Further, implementing agreements are not an element of every HCP. For example, the current draft revisions to the HCP handbook provide that "Implementing Agreements are not required under Section 10 and are typically reserved for more complex, or multi-party plans. Some suggest that in many cases there is no need for an implementing agreement where all of the agreed-upon measures are spelled out in the HCP." Since the adoption of the San Bruno Mountain HCP, we have increasingly employed "Area-wide HCPs" or "MSHCPs" covering multiple species and developed collaboratively by local, State and federal agencies. These Area-wide HCPs and MSHCPs have focused on urbanizing areas, timberlands, rivers and pipelines, transportation corridors, fly-ways and other areas related to solar and wind energy projects. Further, the HCP concept has increasingly embraced habitat more broadly, beyond the conservation of species listed as "endangered" or "threatened".

Increasingly, the HCP approach has been employed at earlier times in anticipation of infrastructure and development, with the increasing involvement of multiple agencies and interests. There are now more than 1100 completed HCPs covering millions of acres and many other similar processes and institutions.

The roots of the HCP concept can be found in earlier major pioneering collaborative efforts, such as the inter-state Delaware River Basin and Chesapeake Bay efforts (see Figure 3.1), and, in turn, provided the seed for the South Florida Eco-system Restoration Project.[6] (See also Appendix C.)

It is clear as well that the concepts underlying the HCP have even broader application. The geographic boundaries and the implementation agreement can be flexible and fashioned to address a variety of concerns ranging from disaster relief following hurricanes and tsunamis to climate change, urban renewal and sustainability.

FIGURE 1.1: NATIONWIDE EXTENT OF HCPS



Legend

Habitat Conservation Plans (HCPs) greater than 100,000 acres*

- Timber Harvest HCP
- Gas and Electric Utility HCP
- Urban Development HCP
- Water Management HCP
- Renewable Energy HCP
- Rangeland Management HCP

Other Endangered Species Act Section 10 Conservation Plans

- Safe Harbor Agreement
- Candidate Conservation Agreement/ Candidate Conservation Agreement with Assurances

* HCPs may cover one species or multiple species. Overlapping plans are not shown for clarity. In-process plans also shown. Approved plans as of January 2016. Boundaries are approximate.

Prepared by David Zippin, ICF

FIGURE 1.2: CALIFORNIA REGIONAL CONSERVATION PLANS

NCCP: Natural Community Conservation Plan (California Fish and Game Code §2800)
HCP: Habitat Conservation Plan (Federal Endangered Species Act Section 10)

The focus of HCPs has been on regulatory compliance. The strong sense from our HCP Dialogue is that we now need to move beyond this limited focus and see HCPs as part of State and federal programmatic efforts to plan, fund and work proactively with local agencies and affected interests and to address habitat conservation in concert with infrastructure and other development.[7] In this spirit, the question is: how are these efforts funded and financed? How do HCPs relate to other local, State and federal programs, particularly those focused on sustainability and the provision of water, energy, infrastructure and development more generally? And, appreciating the growing complexity and inter-relatedness of these programs, how do we promote collaboration and innovation?

"Effective HCPs rely on high-quality conservation, science and rapidly evolving mapping technologies. Advances in both have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent."
—James R. Strittholdt, *President*, Conservation Biology Institute

Above: *A Variety of Desert Parsely growing in a lek.*
The Sagebrush steppe attract greater sage grouse for elaborate mating rituals. These areas, called leks, are protected by the Sage-Grouse HCP
Photo source: the Bureau of Land Management Oregon and Washington

INCREASING FOCUS ON LANDSCAPE-LEVEL CONSERVATION

As a young nation, our focus was on quickly dividing and moving the control and management of lands into the private sector to promote development.[8] With a rapidly growing population, challenged by sustainability, our increasing focus is on a balanced human/nature interface. This is best accomplished at the landscape-level and before the lands have been fragmented (by use, ownership or jurisdiction).[9] Such early action conserves landscape-level eco-systems, reduces acquisition costs (before land values escalate as development nears), and avoids increased conflict as the fire-line of development moves across the landscape.

In fact, for more than 30 years, the HCP approach has been used at increasingly earlier points to address broader eco-systems (in terms of both the numbers of species and the expanse of lands and eco-systems covered). This has also resulted in the increasing involvement of a spectrum of agencies and interests (e.g., at the federal level: BLM, USBR, USFWS, and NPS; USDA; USACE; USDOT FHWA; and EPA).

Nationwide, there are now more than 1100 HCPs completed or in process, covering millions of acres many of which are landscape-level (see Figure 1.1 and Appendix B). These plans relate to transportation infrastructure, pipelines, energy projects and other infrastructure; forests; rivers (e.g. the Colorado and Santa Ana Rivers, the California Bay-Delta). However, in many cases, the formal HCP aspect of this process has been abandoned in favor of consultations under Section 7 of the ESA; agriculture; urbanization; and oil and gas development. For example, these HCPs, or similar efforts, include the following:

- HCP-like Sage-Grouse Action Plans were adopted by BLM and the USFS within eleven Western States to conserve the Greater Sage-Grouse (see Figure 3.6). As a result, the Secretary of Interior has determined that the listing of the species as "endangered" was not warranted.[10]
- The South Florida Eco-system Restoration Project, mentioned above, focuses on the recovery of the Everglades and the restoration and management of its surface water regime, covering approximately four million acres. (See Appendix C.)
- The fourteen state NiSource HCP addresses the impacts of a 15,562 mile natural gas pipeline. (See Appendix B.)
- Two multi-state wind energy HCPs: the Great Plains HCP, covering 268 million acres from North Dakota to Texas, and another covering the eight states adjacent to the Great Lakes. (See Appendix B.)

- The proposed California Desert Renewable Energy Conservation Plan, a HCP, NCCP and DRECP covers 22.5 million acres, which has recently been restructured to focus first on the development of a BLM Land Use Plan Amendment under FLPMA, covering 16 to 18 million acres (with anticipated renewable energy projects comprising 177 thousand acres), based on an innovative "Gateway" mapping and information system. (See Figure 1.2 and Appendix D.)

- There are multiple timber HCPs in the Pacific Northwest, stretching across five states. These are largely either self-funded (by the timber/infrastructure operators) or funded on an ad-hoc basis from various local, State and federal sources and from project fees and overseen at a high level by State and federal agencies. (See Appendix B.)

- The Lower Colorado River Multi-Species Conservation Plan with an area of 717,000 acres that extends over 400 miles of the River to the border with Mexico. (See Appendix B.)

- County-scale HCPs focused on urban and infrastructure development in several states, including California, Colorado, Florida, Texas, Utah, and Washington. The HCPs in preparation or being implemented in California will conserve over 2 million acres of wildlife habitat (mainly in large preserves with protected landscape linkages to maintain connectivity) and will provide streamlined permitting for over $1.6 trillion dollars of economic activity. In several cases, California voters approved, with two-thirds super majorities, the use of local sales tax revenues to finance landscape-level HCPs to mitigate the impacts on endangered species of major expansions of transportation infrastructure. For example, the San Diego Association of Governments (the Metropolitan Planning Organization (MPO)) is raising $850 million in San Diego County sales tax revenues through "TRANSNET", a program to mitigate impacts on wildlife habitat. Similarly, the Orange County Transportation Authority has used Orange County sales tax revenues to acquire more than 1300 acres of conservation lands to mitigate impacts of expanded transportation infrastructure.

- The South Florida Eco-system Restoration Project (see Chapter 3-Case Study 3 and Appendix C), and the Delaware River Basin and Chesapeake Bay programs (see Chapter 3-Case Study 1) are also examples of unique efforts with high-level state and federal participation and funding which have innovatively struggled with approaches to achieve collaborative innovation in addressing habitat and water quality concerns with respect to the broad eco-systems involved.

HCPs have proven effective in both conserving habitat and making development more efficient and less costly. As compared with project-by-project mitigation, early landscape-level advance mitigation and conservation is far more efficient, effective and critically important.[11] And while successful examples of pioneering efforts have been identified and explored, significant questions still remain regarding the implementation of this concept more broadly, for example:

- How are landscape-level mitigation/conservation plans to be funded and then re-paid from infrastructure or other development?

- How can HCP processes be efficiently coordinated with other permitting processes?

HCPs have proven effective in conserving habitat and making development more efficient and less costly. However, questions remain: funding and financing programs and arrangements; coordinated multiple agency permitting; effective monitoring and enforcement; and consideration of other broad concerns regarding, e.g., "sustainability" and "resiliency".

- How can the resulting conserved habitat be best managed, and the related plans and implementation agreements monitored and enforced?
- How can the effects of climate change on wildlife conservation and adopted HCPs be addressed (with an appreciation that a change in climate will result in major changes in both habitat and the form of the HCPs and other programs)?

These questions remain unanswered following the four HCP Dialogue sessions - left to be explored and translated into principles and practices. However, several proposed axioms emerged for further consideration:

- Habitat conservation is most effectively and efficiently addressed, in advance, at the landscape level in anticipation of infrastructure and development.
- HCPs should be viewed more broadly, beyond the regulatory perspective of the ESA, as part of broader "programmatic" efforts (common planning efforts, funding, coordinated implementation) among pertinent federal, state and local agencies and private interests.
- Early surveys, research and programs, at the State and regional level, are important in order to understand and reconcile habitat conservation with economic development in making the HCPs more effective and efficient.
- Early State and federal programmatic funding makes sense, in support of early advanced wildlife habitat acquisition for conservation and mitigation, and may be essential.
- More effective and efficient standardized guidelines, processes, tools, protocols and principles (e.g., relating to inter-agency collaboration, mitigation credit pools) would be helpful.
- The conceptual principles underpinning the HCP concept: collaboratively developed geographic-based plan, implementation agreement (providing for mitigation, management, monitoring, etc.), are applicable to other complex situations that involve a number of affected agencies and interests.

Above (top): *Mohave Ground Squirrel*
Above (bottom): *Burrowing Owl*
The California DRECP identifies areas where habitat conservation and management actions should occur to conserve, enhance, restore, and protect covered species, including the Burrowing Owl and Mohave Ground Squirrel.
Photos by Bud Widdowson (Top) / Phil Leitner (bottom)
Photo source: Desert Renewable Energy Conservation Plan (both)

These principles and related ideas regarding standards, practices and processes are discussed below, as well as thoughts regarding furthering the HCP Dialogue.

CURRENT ISSUES ABOUT THE FORM AND FUNCTION OF HCPS

The foregoing is not intended to suggest that there are not current issues regarding the form and function of HCPs. There are, however, they do not detract from proposals for an early, programmatic, landscape-level approach to conservation in reconciliation with infrastructure and development generally. For example:

- How should we address changed circumstances related to climate change?
- Signatory agencies to ac HCP IAc have specific authority. However, HCPs may address matters that transcend such authority (e.g., addressing a landscape-level eco-system or eco-systems, when, arguably, the specific agency's authority is limited to a specific species). Are we providing by agreement for an expansion of the authority of individual agencies?

- The past warring between the development and environmental communities reflects and promotes distrust and, in turn, an increased focus on the documents evidencing the various HCPs, as well as their enforcement. Environmental interests attack approvals based on the inadequacy of analyses and documentation. In response, the development community and the regulatory agencies, in the middle, respond with even more detailed processes and more voluminous and detailed documentation and demands (sometimes using the burden of the process as a lever in the "negotiations"). The result is often protracted processes and voluminous documents that are inscrutable, promoting reliance on agency interpretation and arguments over their interpretation. There is no clear answer to these concerns, other than to suggest that with experience and with better leadership, as we embrace and implement the idea of "collaboration" in the preparation of HCPs, the process will move from being a negotiation in which each party attempts to maximize the satisfaction of its demands to one in which there is an increased sense of trust, common fairness and reasonableness among those framing the documents. In turn, the expectation is greater simplicity and clarity in the form of the documentation and the processes employed to craft them.

Current issues:

» **Programmatic funding/financing; Differentiating the roles and authority of the various agencies involved in a particular HCP;**

» **Addressing the effects of climate change;**

» **Moving from "conflict resolution" to "collaboration".**

INCREASING ROLE OF SCIENCE, MAPPING AND INFORMATION TECHNOLOGY

An increasingly important foundational element of such broad collaborations is trusted scientific information and protocols that are available and can be relied upon with confidence by those involved. There is a need to further explore how science and science-based tools (models, decision support tools, mitigation calculators, etc.) can help increase efficiency, effectiveness, and legitimacy of these processes. It is suggested, for example, that a web-based data platform, easily accessible and transparent, should be established at the outset of a planning process, and maintained throughout the planning and implementation phases (i.e., transitioning from a platform to assemble available data, to decision-support tools for plan development, to an adaptive management and monitoring platform where data are stored, maps updated, etc.). The intent would be to make the data readily accessible by the affected agencies and interests involved (including non-technical participants) and the public. (See the Data Basin and Gateway approach described in Appendix D.)

It has also been suggested that there should be independent scientific input throughout all phases of planning and implementation, with the observation that DOI and other public agencies acknowledge they are understaffed and unable to keep up with conservation science, and that plans are often ineffective and inefficient (and non-transparent) as a result. The point suggested that conservation science, remote-sensed data, data base platforms, models to fill information gaps, decision-support tools, etc., are evolving rapidly and can be used to increase objectivity, transparency, efficiency, effectiveness, and defensibility of HCPs. At the same time, some have suggested that some of those involved (permit applicants" and some agencies) may not be in favor of "too much science meddling", fearing costs, delays, etc., but that scientists can actually help reduce costs by recommending cost-effective ways of filling information gaps, monitoring species, etc.[12]

Chapter Two: Programmatic Conservation in Coordination with Infrastructure and Development

IN GENERAL

Landscape-level conservation is a critical focus in effectively and efficiently conserving wildlife habitat in concert with infrastructure and development. It is also becoming apparent that this needs to occur in a programmatic manner - coordinated with affected local, State and federal agencies and interests, and, increasingly related as well to other concerns such as "sustainability".

Agencies are often concerned primarily with the provision of infrastructure; which consists of the basic facilities relating to energy, transportation, water supply, waste, storm water and communications. While development of such facilities, and the development that follows, can adversely impact wildlife habitat and ecosystems, most public agencies have advanced to the point that they embrace the need to minimize and mitigate such harm. This concern and the growth of knowledge, techniques, and tools for addressing ecological impacts of infrastructure, is exemplified by the collaborative Eco-Logical Program of USFWS and USDOT ("Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects"). This approach "encourages Federal, State, tribal and local partners involved in infrastructure planning, design, review, and construction to utilize flexibility in regulatory processes. Specifically, Eco-Logical lays the conceptual groundwork for integrating plans across agency boundaries, and endorses ecosystem-based mitigation - an innovative process for mitigating infrastructure impacts that cannot be avoided".[13]

Landscape level conservation should occur in a programmatic manner, coordinated with affected local, State and federal agencies and interests, AND addressed in the context of "sustainability" and "resiliency".

It was the sense of the HCP Dialogue, this appears to be the right direction and needs to be met with a broader multi-agency/interest framework of support, participation, tools

Below: *Kissimmee River in South Florida*
Image of South Florida HCP landscape

Photo source: South Florida Water Management District

and practices. The following is a beginning list of thoughts regarding the principles and tools that would be helpful for a programmatic approach to accomplish the various objectives discussed in this Report which are becoming increasingly common.

LANDSCAPES AND ECOSYSTEMS

As the number of HCPs increase, it would be helpful to have a better understanding of the nature and value of the ecosystems involved, and potential future conflicts or, complexity with respect to their conservation. This could be provided on a State-by-State basis, perhaps pursuant to cooperative federal-State efforts, including, efforts related to various current federal, State and non-governmental organizations (NGO) programs, such as the Eco-logical Program mentioned above, State Wildlife Action Plans or the DOI-led program of Landscape Conservation Cooperatives (LCCs).[14] The specific studies and information could be focused at a State-wide level, which could then focus down on regions and more specific areas within a State. The result could be similar to, for example, the designation of "Areas of Critical State Concern".[15] In some cases, such as the Greater Sage-Grouse, the eco-system may transcend State boundaries. However, while a single plan transcending State boundaries may be appropriate, political and institutional considerations often necessitate individual State plans or arrangements. The approach and design of such plans calls for further thought on the part of the States as well as the federal agencies, perhaps collaboratively. As suggested below, our evolving information systems make the development and implementation of such plans more feasible, whether State-by-State or inter-State in scope.

Early biological research is required: surveys, mapping, identification of potential gaps in the conservation systems, etc., in order to prioritize which landscapes should be conserved, followed by the development of plans and strategies for their conservation (e.g., the acquisition or setting aside of public lands, or the development of conservation/development approaches). This early work may also gauge the threats to wildlife conservation from, for example, urbanization, transportation and energy infrastructure, oil, gas and mineral development, farming and ranching, etc. or climate change. It may also address opportunities, such as those presented by large-scale

Below: *Sage Grouse Habitat*
Sage Brush Landscape

Photo source: the Bureau of Land Management Oregan and Washington.

ranches that are intact and, with the support of the ranchers, available for conservation. To the extent that there are potential conflicts between habitat conservation and other uses, there may be a need for a HCP or a HCP-like planning approach and regional or State coordination.

This work is increasingly supported using sophisticated computer modeling efforts (e.g., eco-system and habitat distribution models, species population models, landscape intactness, ecological integrity, and conservation value models, climate change effects analyses, resiliency and refugia analyses, and mitigation calculators) that are developed and updated in an increasingly collaborative, available and transparent manner.[16]

PROGRAMMATIC WILDLIFE CONSERVATION IN RELATION TO DEVELOPMENT

At various times in the past, States and the federal government have undertaken broad, system-wide efforts to address their lands and waters broadly.[17] Currently, there is a similar feeling abroad, not so much with a view that it is time for a great change in direction, such as experienced in the early 1970's with the environmental revolution, but rather that there now may be more of a common desire to cooperate in reconciling the development/ environment relationship.[18] With this in mind, the following discusses the role of the HCP as part of a broader programmatic approach with a focus on our built environment together with our natural environment.

With our growth in population, anticipated climate change, and the dramatic effects of innovation in information technology, we are experiencing major change in our systems and concerns regarding transportation, water, energy and sustainability (including the conservation of eco-systems). It is critical that we appreciate and embrace this change, and must view the re-ordering involved from the "mother-board" up with wildlife/eco-system conservation being considered together with infrastructure and development earlier and more broadly. They are intertwined in our nation's future and should be addressed programmatically in that manner. HCPs can be seen as the early beginnings of an effort to coordinate and programmatically relate the two more broadly.

At the federal level, an increased focus on a programmatic approach could build on the current HCP and other programs (e.g., State Wildlife Plans, LCCs and, in a more detailed manner, the Eco-Logical program) in bringing together federal agencies and others. It could embrace the concept of collaboration and focus on the coordination of development and conservation - with the HCP as one tool in the tool box. Such an increased focus could be explored more broadly under the auspices of CEQ, DOI and/ or others.[19] Initially, it could include bringing together DOI (including USFWS, BLM, USGS), USACE, EPA, USDOT and USDA, in coordination with, e.g., the DOI LCCs and Eco-Logical transportation-related programs)[20] As modeled by the Sustainable Communities Partnership among EPA, USDOT and the Department of Housing and Urban Development (HUD) as partners, it would be valuable to explore how to include in the development and implementation of those efforts, State and local agencies and private interests. Efforts regarding the conservation of the Greater Sage-Grouse and the California Desert Renewable Energy Program point very much in that direction.

COLLABORATIVE (MULTI-AGENCY/INTEREST) INNOVATION

There are significant changes in our culture and governance structures as a result of the information revolution. With these changes, information is increasingly available and easier to store, manage and share.[21] As a result, we are seeing organizations and institutions operating more horizontally (with greater and quicker direct coordination within, and between, layers in the hierarchies and between hierarchies). Further, we are also working more virtually rather than face-to-face. The shift is toward greater "collaboration" but with less face-to-face interaction.

The HCP is an early model of this shift in our way of working. It stressed multi-agency/interest collaboration in the development of a geographical-based plan, with an agreement for its implementation. What are the processes, practices and protocols called for in the further evolution of this model.[22]

Below: *Conducting Multi-Agency Collaboration*

This image is intended to capture the spirit of the collaborative process, with the "conductor" (perhaps a small group of leaders), assisting the agencies and interests involved to "stitch" together and "craft" a quilt, articulating a way forward – based on science, respect, and, ideally, empathy and exuberance.

Drawings by L. Marsh

Above: *Landscape view of California Bay Delta*
Photo source: Bay Delta Conservation Plan

Key elements of collaborative planning processes:

- **Collaboration:** "Collaboration" is not the same as "conflict resolution" and it is more than "cooperation." Collaboration utilizes a planning, rather than a conflict-resolution model, and can be characterized as agencies (and interests) working and planning together, with respect, consideration and support for the different objectives of each. "Planning" involves the resolution of conflicts; however, in collaborating, participants come to the table with a different sense or set of principles underlying the relationship to others. "Conflict-resolution" brings up images of warring parties, each tending to view the outcome as winning or losing and with each party focused on "more" for itself from the outcome. "Planning", on the other hand, suggests a more amicable, respectful, empathetic relationship among those involved understanding that their differing views will merge through "dialogue" into a single out-come or plan, although with respect for their distinct principles. Finally, the "Implementation Agreement" provides assurances that the plan will be honored moving forward. One way of looking at the collaborative process is that the result (a plan) is the goal and those involved in the planning process need to work together to develop the best plan going forward.

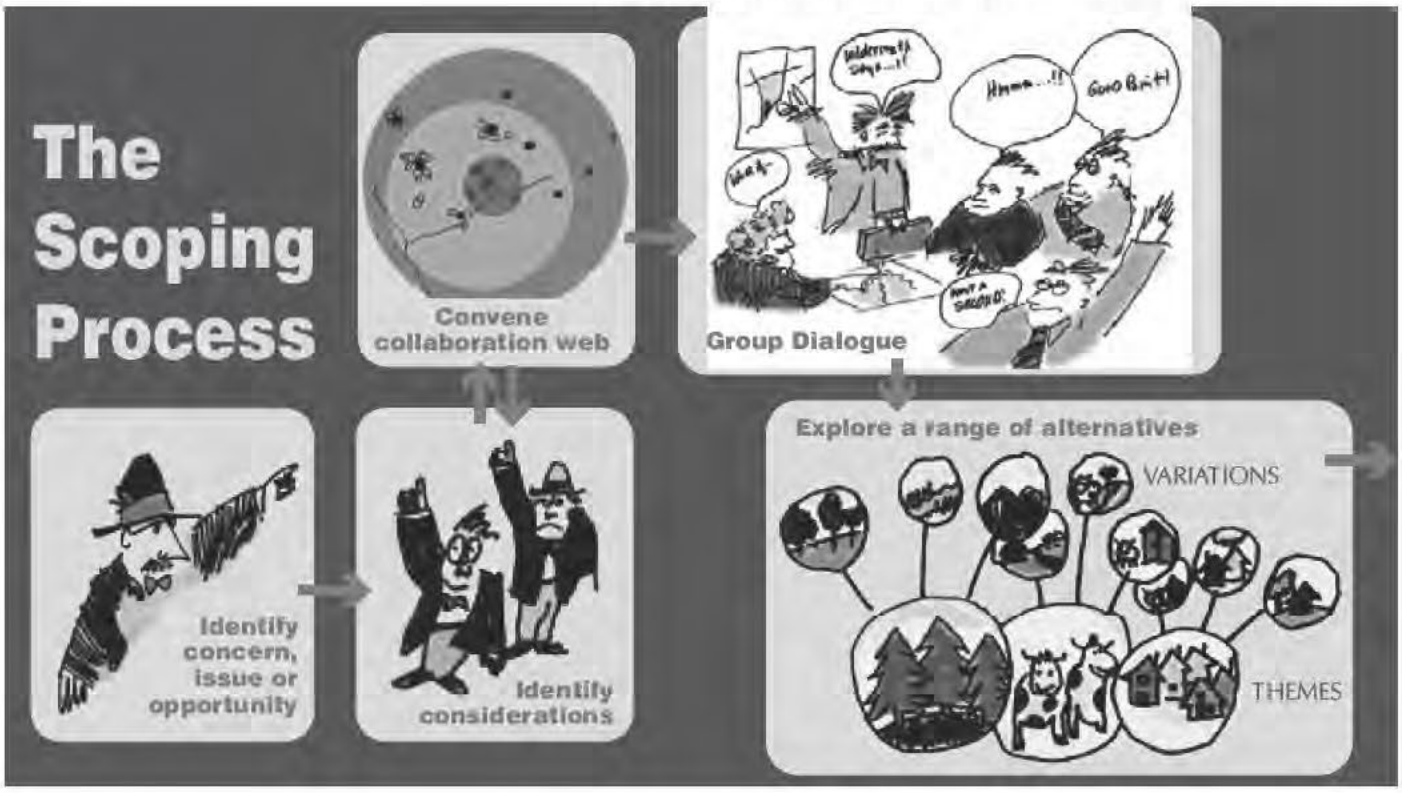
- "**Constituency of Affected Agencies and Interests**"**:** Who is involved? Each planning process has a constituency of affected agencies and interests. It is important to provide for their involvement (at the table or by soliciting and sharing their input and/or votes). Some use the term "stakeholders;" however, often this characterization is seen as excluding various public agencies. So how do we plan for and convene or involve groups in a way that promotes dialogue and gets away from the underlying sense of "winning" and "losing"? Both the Bay-Delta Conservation Plan and the DRECP have struggled with the appropriate inclusionary process, involving a significant number and diversity of agencies and interests, focusing on broad geographic areas.[23] It would be valuable to further consider how these, and other, similar processes were structured, in crafting future efforts.

- **Dialogue:** "Dialogue" is based on principles of respectfulness (in this case, of the differences among the agencies, interests and individuals involved), truthfulness, good will, and civility - while respecting both one's organizational mandates and working to understand and accommodate with empathy the mandates of the other agencies and interests involved.

Innovation pilots and models are a powerful and effective way of working (especially if blessed at a high level by the agencies and interests involved).

This concept of respectfulness of diversity is one of the key principles of our culture. At base, there is an understood principle that people may have diverse views, beliefs, truths and objectives (for example, the importance of a particular use of land or resources), but find a way to join together through "dialogue" in planning and moving forward in the face of such diversity. This respectfulness in the face of diversity is often reflected in a sense of empath and "trust" (notwithstanding a difference of views) that provides the critical element in successful collaborations. [24]

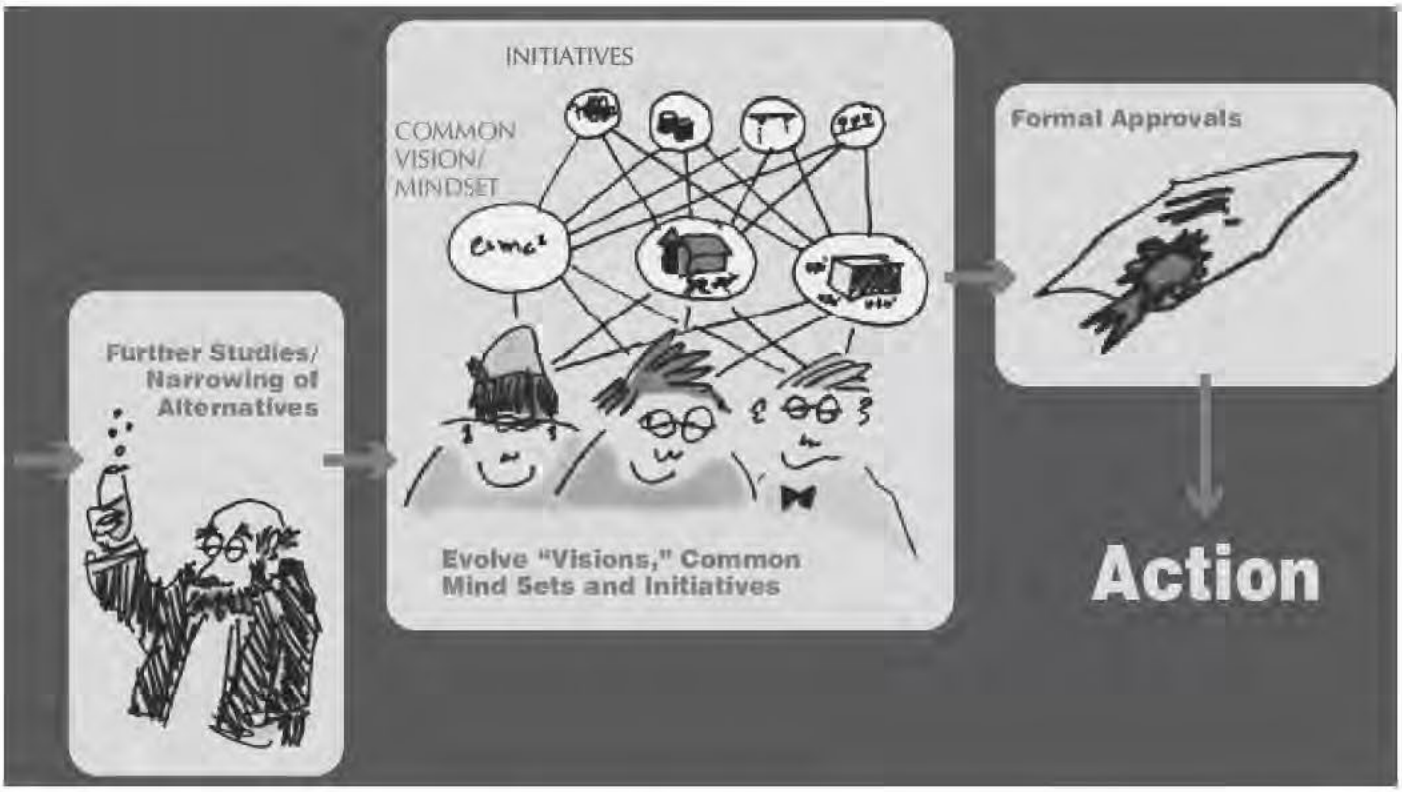
- **Scoping**: "Scoping" is a process that includes the identification and exploration of considerations and concerns of the constituency involved, available information, opportunities, and alternatives (and both their benefits and adverse effects). In turn, it involves a number of practices and principles. For example, it can be difficult to be open and reasonably consider a variety of alternatives that are not one's own.



- **Leadership**: The increased flow of information within and across boundaries[25] does not mean that vertical hierarchies are not important. They are. "Leadership" plays a very important, critical role in the effectiveness of HCP processes. Without adequate leadership, processes can be characterized by hostility and fierce disagreements (and even litigation). And, it is not sufficient for those in leadership to simply direct their different agencies and interests to "work together". Often the result is a leaderless, listless, group of lower staff members dogmatically clinging to outdated or rigid mandates of their particular agencies, with little empathy or respect for the concerns of other agencies and interests. In contrast, the leadership that is required is ongoing oversight and support in bringing to bear the principles of collaboration and dialogue in the processes of

"dialogue" and the "scoping" of concerns, issues and alternatives.[26] This quality of "leadership" is often observed in the active involvement and support from upper management levels to assist their teams or staffs to understand agency interests and mandates. Less apparent is the empathy and "flexibility" to find innovative ways to reconcile various concerns and move forward. The elements of such practices deserve further exploration and understanding, perhaps in relation to the design of a more inter-agency programmatic approach.[27]

In summary, these multi-agency agreements often reflect complex arrangements crafted utilizing these evolving practices of "dialogue" and "leadership."



Drawings by L. Marsh

Designation of Innovation Models and Pilots

As suggested, this is a time of experimentation regarding the Future of Habitat Conservation Planning and for the application of the HCP concept more generally. While the San Bruno Mountain HCP has been embraced at the highest levels, further innovation is called for. For example, several Northern California counties have pioneered approaches to integrate ESA and CWA Section 404 requirements and South Florida is exploring collaboration among federal, State and local agencies regarding the restoration of the Everglades. It would be helpful to identify and encourage innovative "pilot" efforts at the national, State and local levels that transcend institutional boundaries and particular concerns (e.g., ecosystems, wildlife, wetlands and streams, transportation, coastal areas, various elements sustainability, such as climate change) in the context of infrastructure and development of various kinds.[28]

Chapter Three: Specific Concerns, Principles, Processes and Programs

HCPs AND SIMILAR EFFORTS IN CONTEXT

In General

HCPs are "focused" or "focal point" plans and are not comprehensive. They are focused on wildlife habitat conservation, generally in concert with anticipated human developments and activities.[29] Generally, they have focused on a limited number of "Species of Concern" within a "Focused Area" and provide for "Conservation Areas" (generally comprised of "Core Areas" and "Linkages") and/or "Protocols" related to certain activities (e.g., wind farms within a flyway).

Some suggest that HCPs simply provide the basis for ITPs (focused on providing "take" permits for individual listed species) under the ESA. Others respond that these plans are much broader in effect and provide for the conservation of habitat for "suites of species," "ecological communities" and "eco-systems," covering, in some cases, more than a hundred species. Accordingly, from the CEQ Conversation, it became increasingly apparent that we need to understand the workings of the HCP concept in the broader context of local, State and federal programs and practices.[30]

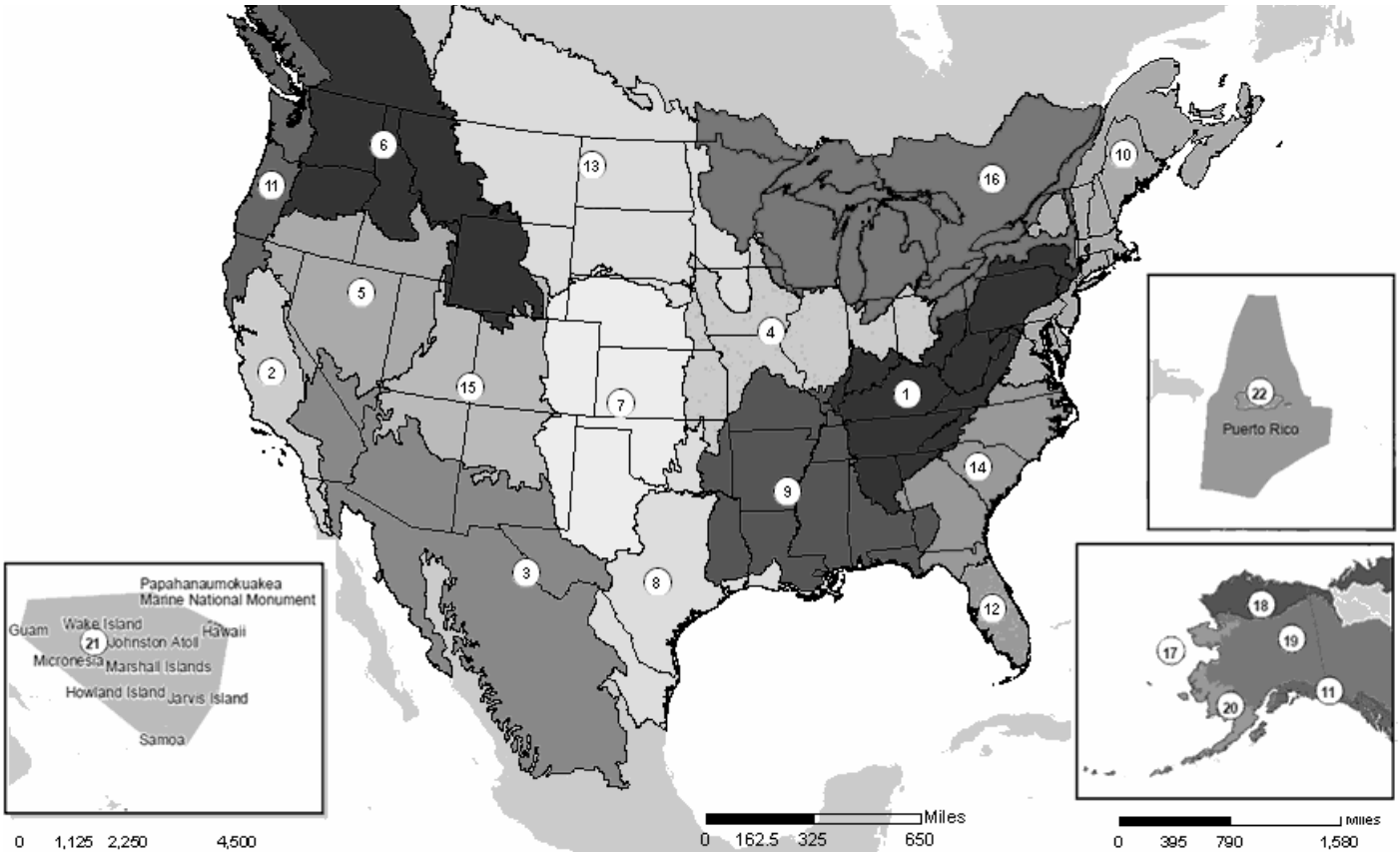
State and Federal Context

As suggested above, HCPs are not State Wildlife Action Plans, nor are they local General Plans. Only recently have they been the basis for CWA permits. Further, to the extent that they focus on permitting, they are not part of State infrastructure planning,

Below: *American Alligator*
The South Florida CERP protect habitats for a range of species.

Photo source: South Florida Water Management District

FIGURE 3.1: DOI - LED CONSERVATION COOPERATIVES



1. Appalachian
2. California
3. Desert
4. Eastern Tallgrass Prairie and Big Rivers
5. Great Basin
6. Great Northern
7. Great Plains
8. Gulf Coast Prairie
9. Gulf Coastal Plains and Ozarks
10. North Atlantic
11. North Pacific
12. Peninsular Florida
13. Plains and Prairie Potholes
14. South Atlantic
15. Southern Rockies
16. Upper Midwest and Great Lakes
17. Aleutian and Bering Sea Islands
18. Arctic
19. Northwest Boreal
20. Western Alaska
21. Pacific Islands
22. Caribbean
Unclassified

Albers Equal Area Conic NAD83
Produced by FWS, IRTM, Denver, CO
Map Date: 12142011

nor have they enjoyed broad programmatic state or federal funding. Yet, they are increasingly viewed as the major federal and, often, State tool for the conservation of wildlife habitat listed as "threatened" or "endangered" or "of concern" (e.g., in urbanizing areas). HCPs are not the only tool for every circumstance. Rather, the sense from the HCP Dialogue, and particularly the CEQ Conversation, is that there is need for additional thought as to the appropriate role of an HCP in the context of state and local planning and regulations.

In discussing (in the CEQ Conversation), the work on the revised HCP Handbook (due out for comment later this year), it appeared that it would likely focus on the regulatory function of HCPs and USFWS under the ESA. In response, the suggestion was made that HCPs could be viewed programmatically as having not only a regulatory role, but also broader programmatic functions (research, funding, acquisition, etc.) related to wildlife conservation and even the environment generally and, perhaps, other concerns of the federal and State agencies (e.g., under CWA, ESA, NEPA, FLPMA, the National Historic Preservation Act, the National Transportation Act, and the National Water Resources Development Act).

In this regard, there are a number of programs and efforts at the federal and state levels that address the conservation of wildlife and deserve further consideration. For example:

- At the national level, there are 22 regional Landscape Conservation Cooperatives (see Figure 3.1), which are self-directed partnerships, under the leadership of DOI, among federal agencies, states, tribes, non-governmental organizations, universities, and other entities to collaboratively define science needs and jointly address broad-scale conservation issues, such as climate change in a defined geographic area;
- USACE and USBR are authorized to develop Watershed Plans;
- CZMA provides for the development of Special Area Management Plands (SAMPs) and the USACE utilizes SAMPs for CWA Section 404 permitting;
- FLPMA directs BLM to develop Land Use Plans for federal lands which it manages and expressly includes conservation as an objective;
- States and territories are required to prepare State Wildlife Action Plans ("SWAPs"). These plans outline steps to conserve wildlife and habitat before they become too rare or costly to restore. Taken as a whole, they are intended to present a national action agenda for preventing wildlife from becoming endangered;
- In California, local agencies and others may adopt Natural Community Conservation Plans ("NCCPs") with the intent that such plans will provide the basis for State permits for State-listed species and avoid the need for any further State and federal listing of species as threatened or endangered;[32,33]
- The California State Strategic Growth Council is working to explore the establishment of a program to develop regional frameworks, plans or guidelines for the conservation of eco-systems and wildlife habitat in the context of infrastructure and other development within the various regions of the State;

- Planning and regulatory commissions have been established with respect to the California Coast (the California Coastal Commission), San Francisco Bay (the San Francisco Bay Conservation and Development Commission) and Lake Tahoe (the Lake Tahoe Regional Planning Agency) to, among other things, conserve natural resources;
- In Florida, the South Florida Comprehensive Everglades Restoration Program (CERP), and other efforts provide a framework for conservation and development in a large portion of South Florida; and,
- The Chesapeake Bay Program and related agreements and institutions have provided for collaboration in the restoration and conservation of the Bay.

Programmatic Approaches – Further Research

In thinking about a "programmatic" approach for addressing wildlife conservation in concert with anticipated infrastructure and development, not only should the HCP model be considered and furthered, but it and its underlying elements (collaboration and the use of geographic-based plans and implementation agreements) may suggest or provide a foundation for other innovative approaches to the broader challenge of providing advance mitigation and conservation of ecosystems in concert with development and sustainability.

In this regard, there are five efforts that deserve significant further study in thinking about how major, large-scale, HCP-like efforts involving multiple agencies and public and private lands and interests might be organized:

- Chesapeake Bay Program and related efforts;
- California Bay-Delta Conservation Plan ("BDCP"),
- Florida Comprehensive Everglades Restoration Plan ("CERP");
- California Desert Renewable Energy Conservation Plan ("DRECP"); and,
- Efforts to develop State plans to conserve the Greater Sage Grouse and thereby avoid its listing as threatened or endangered under the ESA.

In Summary

These five efforts provide a rich trove of lessons, problems, and solutions. They all constitute, however, progress and provide key elements and learning for the crafting of future habitat conservation planning efforts. The major insight was that they all involved programmatic elements (e.g., science, mapping, management/implementation plans, funding, etc.) with participation by the various constituencies of agencies and interests.

Case Studies:

Above: *One of many species protected in the Patuxent River Park in Upper Marlboro, Md. by the Chesapeake Bay program.*
Photo by Anne Arundel
Photo source: Chesapeake Bay Program.

FIVE NATIONAL EFFORTS THAT DESERVE FURTHER STUDY

CASE STUDY 1 | Chesapeake Bay Program

CASE STUDY 2 | California Bay-Delta Conservation Plan ("BDCP")

CASE STUDY 3 | Florida Comprehensive Everglades Restoration Plan

CASE STUDY 4 | California Desert Renewable Energy Conservation Plan ("DRECP")

CASE STUDY 5 | Greater Sage-Grouse Plans

CASE STUDY 1

CHESAPEAKE BAY PROGRAM

Above: *Wetlands*
Image North of the Nanticoke Wildlife Management Area in Wicomico County, Maryland.
Photo by Matt Rath
Photo source: Chesapeake Bay Program.

The Chesapeake Bay is the largest of more than 100 estuaries in the United States. The Chesapeake Bay watershed includes parts of six states; Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia and the entire District of Columbia. There are nearly 1,800 local governments in the Bay watershed, including towns, cities, counties and townships.

The Chesapeake Bay was the first estuary in the nation to be targeted for restoration as an integrated watershed and ecosystem. The Chesapeake region is home to at least 29 species of waterfowl. Nearly one million waterfowl winter on the Bay approximately one-third of the Atlantic coast's migratory population. The birds stop to feed and rest on the Bay during their annual migration along the Atlantic Flyway. Forests cover 58 percent of the Chesapeake Bay watershed. The region loses about 100 acres of forest each day to development.

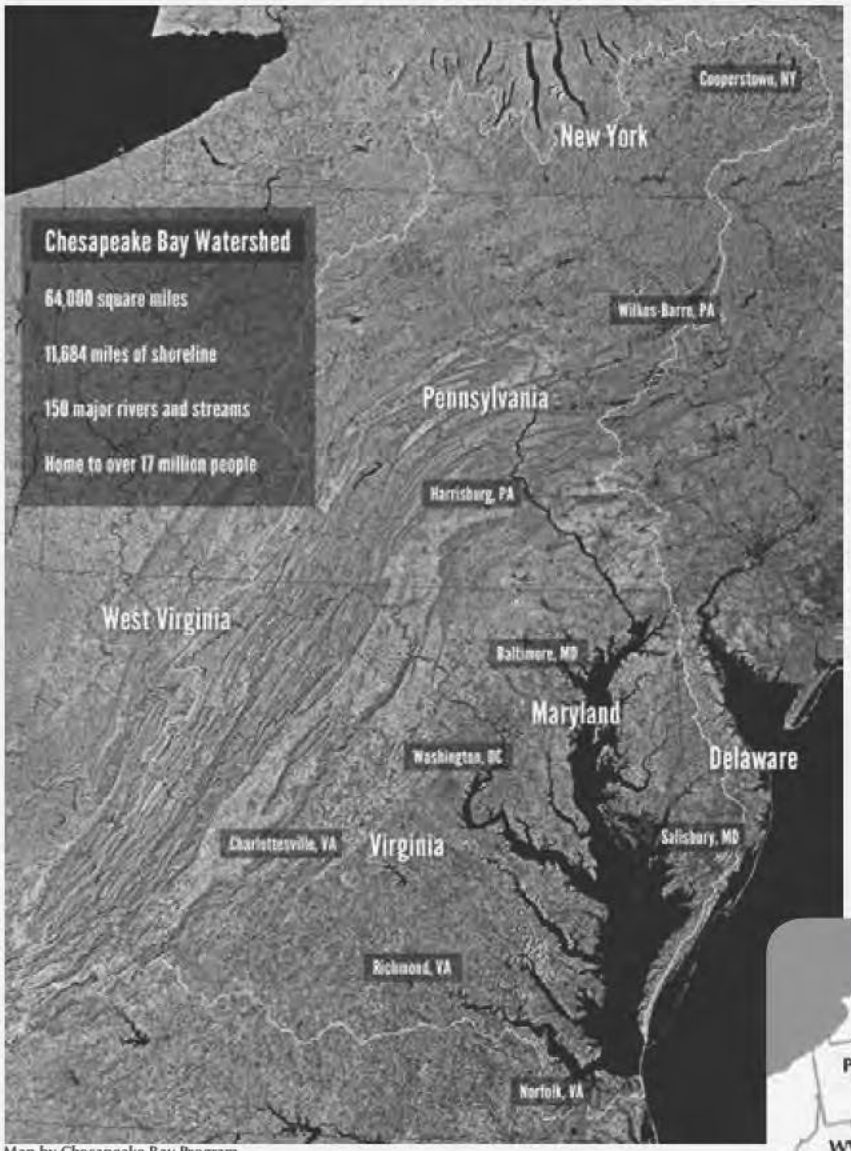
Since the formation the Chesapeake Bay Foundation in 1983, its partners have used written agreements to guide the restoration of the nation's largest estuary and its watershed. Setting goals and tracking progress holds partners accountable for their work, while developing new agreements over time ensures our goals are aligned with the best available science to attain restoration success. In 2009, it became clear that a new agreement was needed that would accelerate the pace of restoration and align federal directives with state and local goals to create a healthy Bay. Bay Program partners gathered input from citizens, stakeholders, academic institutions, local governments and more to draft an inclusive, goal-oriented document that would address current and emerging environmental concerns.

- On June 16, 2014, the Chesapeake Bay Watershed Agreement was signed. Signatories include representatives from the entire watershed, committing for the first time the Bay's headwater states to full partnership in the Bay Program. This plan provides for collaboration across the Bay's political boundaries and establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them.

- In a letter, partners promised to openly and publicly engage watershed citizens in implementing these goals and outcomes. Partners also identified the management strategies in which they planned to participate.[34] There has also been participation by a myriad of other organizations and interests (e.g., the Chesapeake Bay Conservancy, a non-profit organization, was formed in support of the broader efforts of the Chesapeake Bay Program).

This raises questions regarding the role of inter-state compacts, multiple agency collaboration, decisional voting arrangements and the use of a variety of different forms of organization to reach conservation objectives.

FIGURE 3.2: CHESAPEAKE BAY PROGRAM AREA



Map by Chesapeake Bay Program

CASE STUDY 2

CALIFORNIA BAY DELTA CONSERVATION PLAN (BDCP)

One half of California's fresh water flows through the 1,150 square mile "Delta" area in northern California. Historically, it emptied entirely into San Francisco Bay and then into the Pacific Ocean. It supports a rich eco-system, including threatened and endangered species, navigation and agriculture. In addition, its waters have been diverted to agriculture in the San Joaquin Valley and pursuant to a State Water Plan adopted in the 1960's to an urbanizing Southern California. In 1982, an initiative, "Proposition 9", proposing the construction of a peripheral canal skirting the Delta was defeated, leaving in its wake an on-going conflict among Northern California farmers, Southern California developers and environmentalists focused on the allocation of water and the conservation of species dependent upon continued natural water flows through the Delta.

Map by Bay Delta Conservation Plan

Above: *San Joaquin Kit Fox*
Photo source: USFWS / Bay Delta Conservation Plan

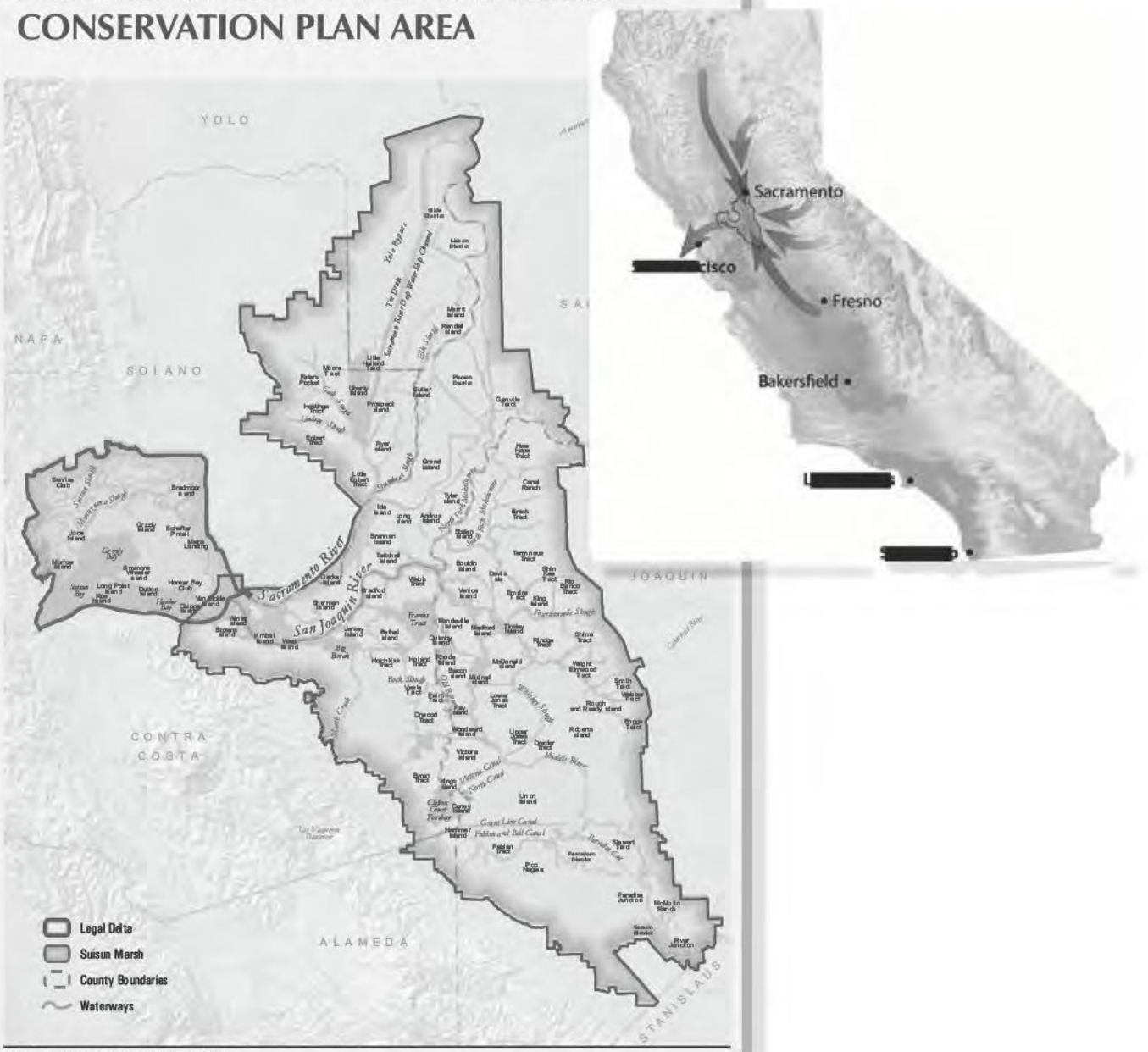
Various efforts followed with the purpose of developing a plan that would reconcile these competing interests and concerns. In 1994, in part based on the HCP and HCP-like experiences, Secretary of Interior Bruce Babbitt and Governor Pete Wilson, established a 25 member State-federal Task Force (the CALFED Water Quality and Ecosystem Restoration program). This commenced a complex series of efforts to manage the Delta water for purposes of providing increased and reliable water supplies to the south and for Delta ecosystem restoration and for the establishment of State institutions necessary to manage such an effort. The Delta Stewardship Council and Delta Plan (adopted by the Council in 2013) resulted from this effort. Currently these two elements, water supply and ecosystem restoration, are being addressed separately (as the "California WaterFix" and "California EcoRestore"), with the intention of fulfilling the requirement of the 2009 Delta Reform Act to meet the co-equal goals.[35]

Clearly, the California Delta is at the center of a political vortex of diverse interests; however, in thinking about the form and use of HCPs or HCP-like approaches, this saga deserves significant further review.

Below: *Why BDCP is Important for California*

Infographic by Bay Delta Conservation Plan

FIGURE 3.3: CALIFORNIA BAY DELTA CONSERVATION PLAN AREA



Maps by Bay Delta Conservation Plan

Above: *Limpkin*
Many animal habitats were preserved through the South Florida Task Force.
Photo source: South Florida Water Management District.

Above: *Kissimmee River Aerial View*
Photo source: South Florida Water Management District

CASE STUDY 3

FLORIDA ECOSYSTEM RESTORATION TASK FORCE

The South Florida Ecosystem Restoration Task Force was established by section 528(f) of the Water Resources Development Act of 1996.[36] The Task Force consists of 14 members from four sovereign entities: seven federal, two tribal, and five state and local government representatives.

The mission of the Task Force is to restore the ecosystem encompassing nearly four million acres of the southern tip of the Florida peninsula, the Everglades and the greater Everglades ecosystem (spanning from the Kissimmee River basin north of Lake Okeechobee to Florida Bay) the worlds largest intergovernmental watershed restoration effort (See Figure 3.4). Its specific duties are to:

- Coordinate the development of consistent policies, strategies, plans, programs, projects, activities, and priorities addressing the restoration, preservation, and protection of the South Florida ecosystem;
- Exchange information regarding programs, projects and activities of the agencies and entities represented on the Task Force to promote ecosystem restoration and maintenance;
- Facilitate the resolution of interagency and intergovernmental conflicts associated with the restoration of the South Florida ecosystem among the agencies and entities represented on the Task Force;
- Coordinate scientific and other research associated with the restoration of the South Florida ecosystem; and,
- Provide assistance and support to agencies and entities represented on the Task Force in their restoration activities.

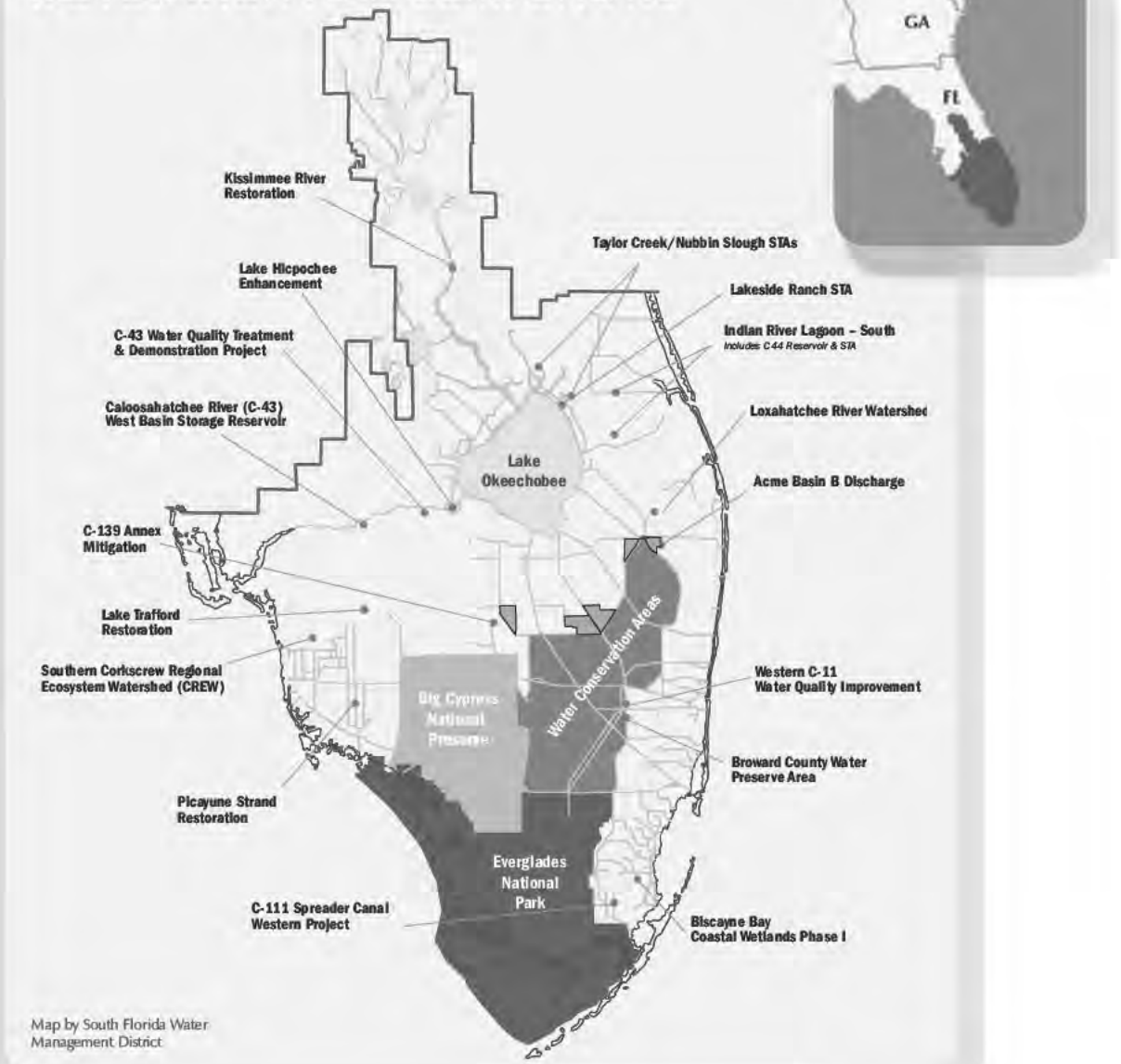
In addition to the Task Force, there is both a Working Group and a Science Coordination Group. The Task Force works by consensus or where consensus cannot be reached, by a two-thirds majority.

The Task Force focuses on a group of specific projects focused on the management of water and other efforts contributing to the restoration of the eco-system of South Florida.

The federal legislation that authorized the Task Force, together with anticipated funding of $8 Billion dollars of federal, State and other funding, provided an effective framework for the effort and appears to provide valuable suggestions for the questions raised by the HCP Dialogue.[37]

This study is important in that the current federal legislation and the resulting Task Force, replaced a somewhat dysfunctional effort that relied on a Governor's Commission in partnership with a federal Task Force (resulting from concerns over compliance with the Federal Advisory Committee Act). Further, the study needs to be reviewed in the context of the history of the State's effort to conserve its wildlife habitat through regulation and innovative funding approaches (e.g., utilizing proceeds from real estate transfer taxes as the basis for obtaining funding for ecosystem conservation).

FIGURE 3.4: COMPREHENSIVE EVERGLADES RESTORATION PLAN COMPONENTS



Map by South Florida Water Management District

Map by The Renewable Energy Action Team

Above: *A desert tortoise emerges from its burrow.*
Photo source: Arizona Game and Fish Department

Above: *View of Cadiz Valley*
Image of the DRECP landscape

CASE STUDY 4

CALIFORNIA DESERT RENEWABLE ENERGY CONSERVATION PLAN ("DRECP")

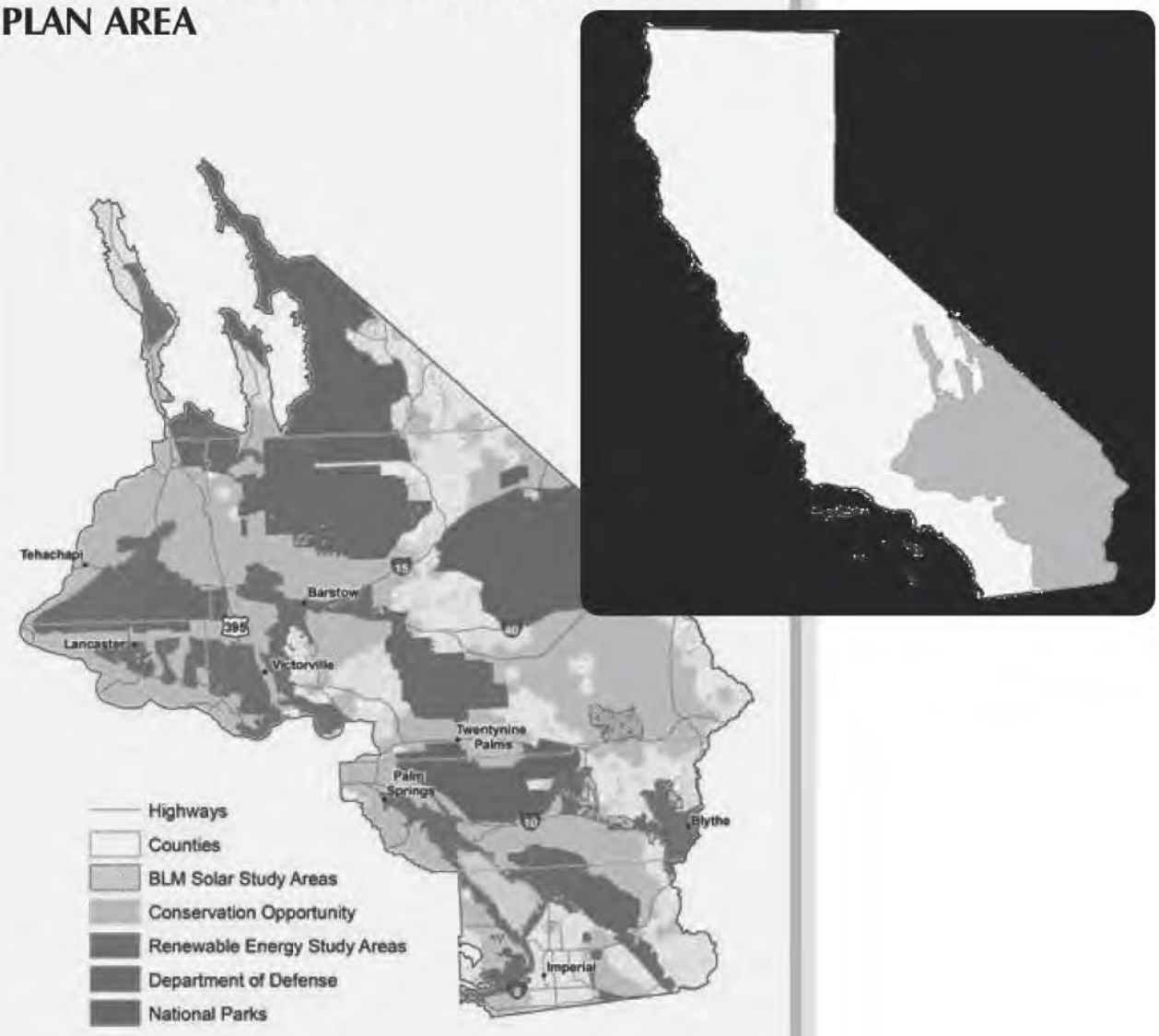
The DRECP effort commenced in 2008 under an agreement among four key California State and federal agencies (California Energy Commission (CEC), CDFW, BLM and USFWS) the Renewable Energy Advisory Team ("REAT"), to expedite the location of renewable energy projects in the 22.5 million acre California Desert in concert with ecosystem conservation (focused primarily on the habitats of threatened or endangered species under State or federal law). In 2015, a draft DRECP was published, with more than 10,000 comments in response (many of which were critical of the plan). The REAT then suspended further processing of the DRECP in favor of a staged process with BLM leading off with the adoption of a Land Use Plan Amendment for the same purpose covering 16.5 million acres of federal lands under its jurisdiction within the Desert.

Comments made on these efforts included the following:

- The DRECP and California Delta efforts demonstrate that such large-scale HCPs are simply unworkable -- primarily citing both the complexity of the biology and the multitude of agencies and interests involved. To others, this called out the importance of thinking through the process and organizational structure so as to avoid such outcomes.
- The effort resulted in the development of key information, processes, systems and protocols that would allow such efforts to move ahead more quickly and competently.
- Key players were initially left out (e.g., the DRECP failed to include the counties as major players from an early point in the effort).
- The DRECP time-line was driven by the interest of the agencies in developing underlying processes (e.g., informational processes) rather than focusing on accelerating the early development of renewable energy resources.

These points are currently the subject of further discussions with key participants in the DRECP process. All of this suggests that this is a valuable case study that deserves further study.

FIGURE 3.5: CALIFORNIA DESERT RENEWABLE ENERGY CONSERVATION PLAN AREA



Map by renewable Energy Action Team

Above: *Sage Grouse in Lek*

Many birds and mammals depend on sagebrush ecosystems in the western United States for survival. In the last century, drastic changes have resulted in alteration and fragmentation of sagebrush communities, negatively affecting more than 350 species of plants and animals.

The BLM strategy to conserve this habitat emphasizes a cooperative approach and provides a framework for implementation.

Photo source: the Bureau of Land Management Oregan and Washington.

CASE STUDY 5

GREATER SAGE-GROUSE PLANS

Greater sage-grouse habitat covers 165 million acres across 11 states in the West; a loss of 56% from the species' historic range. At one time, the greater sage-grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide. The lands involved are currently the focus of major oil and gas operations.

In response, in 2015, the USFS and BLM finalized land use plans that will conserve key sagebrush habitat, address identified threats to the greater sage-grouse and promote sustainable economic development in the West. The plans were a critical component that assisted the USFWS to conclude that the rangeland bird no longer warrants protection under ESA.

- As part of an unprecedented and proactive partnership to conserve the uniquely American habitat that supports iconic wildlife, outdoor recreation, ranching and other traditional land uses, BLM, USFS, USFWS, and the Natural Resources Conservation Service continue to work together to ensure the conservation of the West's sagebrush habitats and with the States as BLM and USFS finalize plans to coordinate their conservation efforts. The involved States have management programs to address the conservation of the bird and significant amounts of its habitat.

- These plans focus on the conservation of "Priority Habitat" areas that have been identified as having the highest value in maintaining the species and its habitat. Land use measures in Priority Habitat are designed to minimize or avoid habitat disturbance. Within Priority Habitat, specific areas have been identified as Sagebrush Focal Areas. The Sagebrush Focal Areas are important landscape blocks with high breeding population densities of sage-grouse and existing high quality sagebrush. The plans also designate General Habitat Management Areas, which provide greater flexibility for land use activities.

These plans contain three common approaches:

- **Minimizing new or additional surface disturbance:** The plans reduce habitat fragmentation and protect intact habitat by implementing surface disturbance caps on development, minimizing surface occupancy from energy development, and identifying buffer distances around leks - areas critical to the sage-grouse life-cycle.

- **Habitat Enhancements:** Improving habitat condition while restoring lost sagebrush habitat can be difficult in the short term; it is often possible to enhance habitat quality through purposeful management. Where there are unavoidable impacts to habitat from development, the plans will require mitigation efforts to enhance and improve sage-grouse habitat.

- Reducing rangeland fire threat Rangeland fire can lead to the conversion of previously healthy sagebrush habitat into non-native, cheatgrass-dominated landscapes. Experts have identified fire as one of the greatest threats to sagebrush habitat, particularly in the Great Basin region of Idaho, Utah, Nevada, Oregon and California. The plans seek to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush.

Individual State plans contain variations where different approaches or priorities were consistent with overall conservation objectives. The plans honor all valid, existing rights, including those for oil and gas development, renewable energy, rights-of-way, locatable minerals, and other permitted projects.[38]

FIGURE 3.6: GREATER SAGE-GROUSE PLAN AREAS

Developed in coordination with working groups (comprised of BLM and other federal, local and State agencies and landowners). Greater sage-grouse habitat covers 165 million acres across 11 states in the West, a loss of 56% from the species' historic range. At one time, the greater sage-grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide.[39]

Above: *Signing of the Santa Ana River Watershed Group MOU*

The signing provided for watershed-wide Multi-Agency collaboration. At the table: the EPA Regional Administrator, Assistant and Deputy Secretaries of Agriculture, Assistant Secretary of the Army for Civil Works, a Riverside County Supervisor, General Manager of the Santa Ana Watershed Project Authority (the five water agencies) and General Manager of the Orange County Sanitation District.

Photo by Blake Anderson, *General Manager*, Orange County Sanitation District.

Multi-agency Coordinated Permitting and Programs

HCP applicants comment that issuance of an incidental take permit (ITP) under section 10 of ESA does not constitute a comprehensive, "one-stop" permitting procedure, notwithstanding the emphasis on landscape-scale planning, presumably to include environmental media (air, water) other than wildlife habitat. USFWS regulations already allow the use of HCPs for compliance with the Migratory Bird Treaty Act (MBTA) for listed birds. USFWS guidance also allows the combination of HCPs with Eagle Conservation Plans under the Bald and Golden Eagle Protection Act. In some States such as California, Washington, and Massachusetts, HCPs are integrated successfully with State endangered species permitting requirements. HCPs are flexible enough to allow greater permit coordination or integration that would make them more attractive to applicants. In 2012, the first regional HCP was integrated in California with a regional general permit under the Clean Water Act (Section 404)[40], which is administered by the USACE and EPA. Four other regional HCPs in California are pursuing the same CWA integration but they are experiencing technical and policy challenges.[41] Integration of CWA Section 401, which is administered by the States and EPA may be the next step. Can agency guidance be revised to better facilitate integration of ESA and CWA compliance on a regional scale? There is flexibility in the regulations for implementing CWA Section 404, with a variety of integrated approaches to permitting, but new guidance would assist in providing additional support to agency field staff to do integrated approaches specific to HCPs and CWA Section 404.

It has been suggested that an approach to better implement landscape-level approaches would be for the federal government to delegate to States greater authority with respect to wildlife habitat conservation. Others have expressed concern regarding the conservation focus of the State programs. In this regard, USFWS, with some opposition, has recently proposed that its listing criteria be revised to include consultation with affected states during the review of listing petitions. This recognition of States' expertise could be further enhanced through more rigorous implementation

of the PECE criteria,[42] and devolution to qualifying states of greater responsibility for species and habitat protection by means of cooperative agreements pursuant to Section 6 of the ESA or other provisions (e.g., Sikes Act agreements).

In States with their own species protection programs, such as California, USFWS could eliminate overlapping or redundant requirements, and consider whether to delegate responsibility for implementation of ESA as long as States meet minimum requirements and demonstrate their ability to uphold federal law. There are excellent examples of the federal government delegating to states the implementation of federal environmental regulations. More to the point, FHWA delegates to some State DOTs considerable authority with respect to compliance with NEPA, CWA, and the National Historic Preservation Act. Some State DOTs also have been delegated responsibility for ESA compliance. On the other hand, it has been suggested that the delegation of federal ESA responsibility to a State is problematic in that they see some State regulations as far less stringent than their federal counter-parts. (See also endnote 7 regarding the Western Governors Association Initiative.)

Delegation of conservation to state may be effective programmatically or in more area-focused arrangements.

Further, if such delegation were to occur, the differences in the regulatory approaches would need to be considered. For example, several mechanisms exist to obtain pre-listing assurances for candidate species in the event that they become listed. In this regard, Candidate Conservation Agreements with Assurances (CCAA) are becoming more popular as a tool for non-federal participants to gain regulatory assurances that conservation measures adopted in the Agreement will be sufficient to obtain take authorization once the species is listed. One challenge in the use of this tool is that it often has a higher conservation standard than what is required by an HCP once a species is listed. This difference may provide disincentives for its use and cause some applicants to wait instead until the species is listed, defeating the purpose of using CCAAs to assist in preventing listings.

USFWS has also proposed to engage private landowners in the conservation of candidate species that have not been listed. In return for the adoption of approved conservation measures, landowners would be given tradable "credits" to be recognized in the event of a listing as an offset to post-listing requirements, or traded to third parties in the discharge of their ESA mitigation obligations. Although the proposal was made in November 2014, and widely applauded, it has not yet been adopted. In fact, many HCPs include non-listed species, with the federal government stating that if one of these species becomes listed during the permit period, then the conservation measures for that species as detailed in the HCP will be deemed sufficient and the Incidental Take Permit will extend to that species.

CONSERVATION, FUNDING AND FINANCING

It is generally agreed that it makes sense for the lands needed for conservation to be acquired at an early point (e.g., before title of, and regulatory authority over, the lands are fragmented and there is an increase in their economic value as a result of anticipated development). The question has been how are those acquisitions to be funded or financed?

Generally, wildlife conservation is "funded," directly from federal, State and local taxes (e.g., federal fishing and hunting gear taxes), State taxes (e.g., those levied by Florida) on the transfer of real property, and local sales taxes (e.g., those levied by the California counties of San Diego and Orange), property taxes (e.g., tax increment financing under recent California and Texas legislation) and impact (mitigation) or "in lieu mitigation" fees, charges and requirements with respect to activities and mitigation required with respect to specific projects.[43]

The major problem is the paucity of funds for advance acquisition of lands on a landscape level. Such funding is critical to economically mitigate or offset the impacts of the anticipated infrastructure and development (and, any additional lands that should be acquired for "conservation" by the public over and above that required for the compensatory mitigation of projects). And, it is anticipated that such advance funding is to be reimbursed later by mitigation fees and charges. This is not dissimilar to the federal New Town Program of the late 1960's - early 1970's, focusing instead in this case on conservation (but with possible development in mind as well).[44]

It has been suggested that it is sufficient to be able to state in advance that certain lands must be conserved and, in effect, to make them available for conservation by regulation. The problem is that in some situations (e.g., urbanization), uncertainty revolves around which lands should or can be conserved. For example, where the lands have been highly subdivided, the conservation of habitat often calls for careful planning and prioritization to determine which portions can be developed and which should be conserved.

The difficulty increases with respect to private property. For example, a designation of such property for conservation raises issues of a "taking" in violation of federal and some state constitutions. Generally the sentiment of local property owners and elected officials has been that the acquisition of privately owned lands for conservation calls for willing sellers and sufficient funds to purchase the lands. One alternative has been for the agency with land use authority to simply zone the land for low-density development (e.g., one residence per 40 acres). Clearly, these issues are both politically sensitive and legally complex.

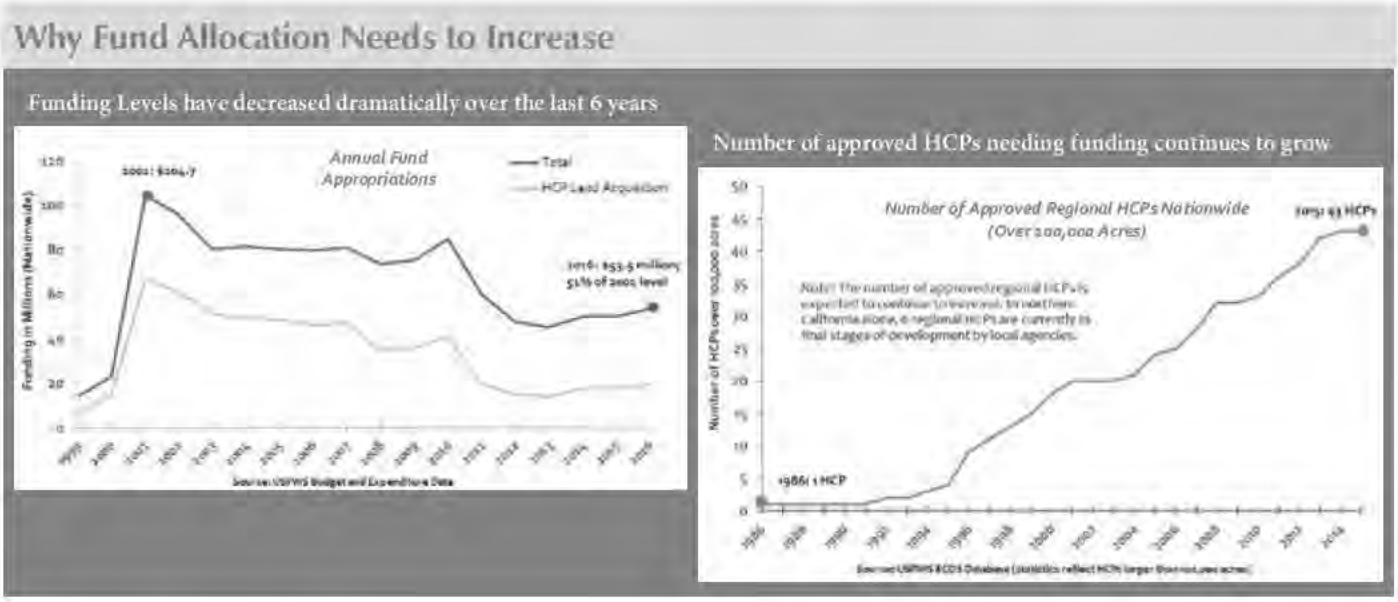
In other cases (e.g., agricultural lands that are not within the path of urbanization or timberlands where urbanization or land-scale mining is unlikely to occur), the use of the lands may be more readily coordinated with needed wildlife conservation and, as a result, there is less need for such early acquisition funding. However, even in these cases, it may be desirable to put in place conservation easements.

As to the lands acquired early for conservation, there are a number of questions to be addressed. For example, what are the available sources of funding for acquisition,

Below: *Why the Fund Allocation Needs to Increase*

The proposed partial restoration of the Fund to $85 million is still much less than the funding provided during the period 2001-2010. Grant requests far exceed the current allocation. The Fund needs to increase substantially in future years to catch up and keep pace with the expected growth in grant requests.

Charts provided by John Hopkins, *Director*, The Habitat Conservation Planning Coalition and National Habitat Conservation Planning Coalition



especially with respect to conservation lands that are anticipated to be used in the future as compensatory mitigation? Or for lands that are required for advance compensatory mitigation, does it make sense, in certain circumstances, to acquire additional lands for conservation which may be over and above that required as advance mitigation? Additional lands can augment the natural resource values of mitigation lands, such as by providing corridors for connecting mitigation parcels, adding to the land area of mitigation parcels and thus increasing the effectiveness of the conservation provided, and by buffering mitigation parcels from effects of nearby land uses. Further, in some cases, the lands to be conserved may provide natural landscapes or value to related, anticipated urban development and the burden of their conservation may be appropriately assessed to such urban development.

There is a critical need for "advance mitigation arrangements" with the provision of mitigation credits for future individual projects.

Lands Available for Conservation

In thinking about a programmatic view, it is important to keep in mind, the nature of the lands involved and, in particular, the extent of public lands available or appropriate for conservation.

Federal Lands

One-third of the Nation's lands remain in federal ownership after significant grants and conveyances in connection with the admission of various states; to allow for mining and timber production and homesteading; to promote and provide highways, canals and railroads; and to allow the productive development of swamp and overflowed lands and other lands. Increasingly, lands have been reserved and set aside for parks, recreation and the conservation of wildlife. The question of the federal contribution to future wildlife conservation in the implementation of HCPs, both in the form of funding and land, is important and a matter of federal policy as we move forward with solar and wind energy projects, inter-state pipelines and transmission corridors, high-speed transportation corridors, oil and gas projects and the development of housing and other infrastructure for our future population.

An initial question related to lands in public ownership is: what portion should be set aside for conservation of wildlife habitat? And, how should that initial allocation be related to the provision of public lands as compensatory mitigation? This is an inquiry that is broader than the question of whether and to what extent may or should public lands be utilized as compensatory mitigation. Clearly, in crafting regional or area-wide HCPs in the past, public lands have been considered in determining the lands to be conserved in the future. Generally, it has been suggested in the past that the financial burdens of HCPs for urbanizing areas should be shared equally (with contributions of funding and land) among local, state and federal sources.

In this regard, a more focused and key issue has been whether and how, e.g., federal lands can and should be available as compensatory mitigation for impacts and effects from activities on private or other public lands. And, whether the conservation of federal lands can provide "durable" mitigation. Generally, in determining compensatory mitigation, it has been suggested that compensatory mitigation must be in place for the life of the impacts for which the mitigation is provided, including the time required for the restoration of the impacted habitat.

It is clear from efforts to address the conservation of the Greater Sage-Grouse and with respect to the DRECP, federal lands, in addition to state and private lands, could play a key role in the long-term the conservation of wildlife habitat and in compensating for the impacts of infrastructure development. In this regard, Sikes Act Agreements recently have been entered into by CDFW and BLM in the California Desert that

Above: *Cadiz Valley*
View across the Cadiz Valley in eastern San Bernardino County.
Photo by Chris Clark
Photo source: KCETlink

provide for the cooperative conservation of lands comprising a BLM grazing allotment voluntarily relinquished by the rancher (permanently ending the grazing of the lands involved). The conservation value of the relinquishment would then provide compensatory wildlife habitat mitigation as required by the CDFW in connection with the impacts of a proposed renewable energy project.

This underscores the desirability of viewing conservation programmatically and more broadly - to look at wildlife conservation as transcending ownership and governance boundaries. Further, the considerations and interests involved are not just related to infrastructure/development and habitat, but, rather, include other considerations and concerns, such as those related to energy, water and air (including climate change) "sustainability", and other resources and values.[45]

State, Local and Other Public Lands

It is important to know the extent and nature of private, local, State and federal lands related to any proposed HCP effort.

There are a broad range of lands that are held in public ownership, including, for example, lands provided to States upon their admission to the Union, open space lands held by local agencies and public agencies in connection with development, rights-of-way of various sorts, lands acquired as the result of a failure to pay property taxes, waters and waterways, etc. These lands may or may not be acceptable as "mitigation" for project impacts, and in either case may add to a conservation reserve.

There are other government and privately owned lands (including, e.g., allotments and rights-of-way overlying BLM lands) that could be available for wildlife conservation in whole or in part through the use of easements, agreements and other similar arrangements.[46] In many cases the conservation of wildlife habitat can be coordinated with other uses of the lands. These lands could be mapped and catalogued with respect to their potential value for habitat conservation.[47]

In thinking about the planning for the conservation of state and privately owned lands, there are several important considerations. In some cases, the lands may be islands in a sea of federal or other lands, reflecting their character as lands provided to a state in connection with its admission to the Union, or as grants to promote railways or canals (in the form of alternate sections of lands), or lands patented in large-scale grants to private owners under various treaties (e.g., the Treaty of Guadalupe Hidalgo), in some cases in excess of 100,000 acres, some of which were subsequently ranched (e.g., Visitacion, Tejon, Irvine, and Hearst ranches). These ranches have been the subject of HCPs and similar arrangements. Often, however, many of the grants, to railroads and to states, are in a checkerboard-like configuration, making development difficult and promoting their use as conservation lands (e.g., the Cadiz Conservation Bank in eastern San Bernardino County).

Infrastructure, Transportation Facilities, Pipelines, Transmission Lines, Renewable Energy Facilities and Oil and Gas Infrastructure

Various kinds of infrastructure can be designed and used in concert with wildlife conservation. In some cases, such as the NiSource pipeline, HCPs have been utilized to obtain permits under ESA. In others, such as the Mid-west wind farms, HCPs are being considered; however, it seems that because of the lack of anticipated land coverage, they would be better addressed using a set of approved protocols or general permit. Solar infrastructure presents a more concentrated land use (normally, 250 600 acres) which have been the subject of individual project ITPs. Oil and gas infrastructure provides yet a different infrastructure configuration and has been the subject of area-wide HCPs (e.g., in the Bakersfield and San Joaquin Valley HCPs) and the State Plans for the Greater Sage-Grouse.

In all of these cases, there is a significant opportunity to address ecosystem and habitat conservation together with the required infrastructure.

Agricultural Lands

Agricultural lands present a significant opportunity to coordinate farming and habitat conservation activities. Further, wildlife habitat can be enhanced in coordination with agriculture activities. This provides not only mitigation for such agricultural uses, but also provides to the farmer or rancher the opportunity to coordinate agricultural uses with conservation, providing the farmer with mitigation credit that can be sold and applied as mitigation for other projects and uses.

Below: *Irrigation in Utah*
Photo by Danny Hart
Photo source: USEPA

Allocating the Burden

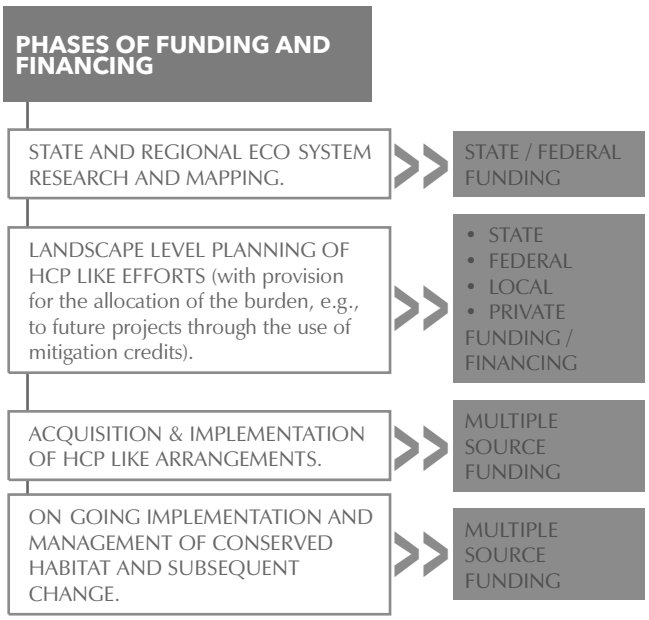
It is critical to evolve from fixed-state plans to strategies and evolving programs.

Ultimately, the benefits and burdens of conservation are shared among public and private interests, but the burdens are usually imposed in a focused manner on "future" private development (as opposed to the owners of lands previously developed and impacting habitat of the same character).[48] A difficult question is how the burden is to be allocated. The answer goes to the character of the private property and the relative duty that attends private and public lands to bear the burden of conservation, which has become increasingly of concern.

With respect to the "public" share, the question goes to the appropriate allocation of the burden of conservation among various "publics" (e.g., the public within the local area, the region, the State or the Nation or those receiving certain services water, transportation, energy, etc.).

This is a very broad topic and deserves significant further consideration.

Funding of HCP Phases



Further, in thinking about the funding and financing of HCPs, it is helpful to consider the various distinct phases of HCP development and implementation. The costs of each of the different phases of the HCP process should be considered individually, as the legal authority and sources of funding and financing may vary, as follows:

- Early broad-scale research, surveys and mapping (and potentially planning) at the regional, state and national levels: these costs are normally borne by government agencies and may be shared. As the surveys and mapping are more focused, or relate to a particular industry or group of projects, the costs may be allocated to or shared by the particular industry or projects to the extent they are benefited and the burden the costs, are allocated to them as part of the HCP process. Until recently, this has largely been part of the HCP planning phase, but resource agencies and others have

been increasingly contributing to early research and mapping to provide ecosystem scale analyses. Further funding for research in this area would be helpful.[49]

- Planning and preparing the HCP: The costs of biological research and analyses and the preparation of a HCP that is focused on a specific "Area of Concern" are generally shared among the private and public sources involved (local, state and federal; in some cases, federal ESA Section 6 funds are available). The sharing of costs is often provided for in a HCP Planning or Implementation Agreement or Memorandum of Understanding that is developed at the outset of the formal HCP process.[50]

- Historically, the sources available for this purpose have included State or federal planning grants supplemented by local government general funds (or in-kind work). In some cases, planning funds have been supplemented by project proponents, such as transportation or energy infrastructure agencies, or private organizations.

- Acquisition of habitat: The costs associated with the acquisition of wildlife habitat are often the most significant in the implementation of the HCP and are paid from public local, State and federal funding sources and, significantly, project mitigation fees or compensatory mitigation.

- In some cases, e.g., County-levied sales tax revenues have been used to mitigate impacts from transportation projects.[51] In other cases, funding has been provided by impact fees on development projects. Since these fees relate to development, the habitat conserved tends to be near the development and the cost of the habitat is inflated due to the inflationary pressure induced by development in the area. In contrast, if there were early up-front funding from local, State and federal sources, habitat could be acquired prior to the escalation in its price due to development pressure. Moneys expended to purchase habitat in advance could be re-paid, at least in part, from development impact ("in-lieu") fees. As discussed below, the question is how to structure such advanced acquisition programs. For example, from the federal perspective, if the federal funds provided are

Below: *Delta Smelt*
Photo source: Bay Delta Conservation Plan

intended to be part of a revolving fund, legislation would be required to provide that the re-payments would be retained in the fund.

- Management: Restoration, Maintenance and Monitoring: The costs related to management: restoration, maintenance and monitoring are often viewed as perpetual and, typically, funded from on-going public sector funding or by the developer as an endowment concurrent with the acquisition of habitat. In some cases, the mitigation may be required only for the term of the impact (including any time required for restoration). These needs have been an increasing focus of HCP funding discussion, especially in light of the need for flexibility due to environmental change, unforeseen circumstances and conservation science development.

- Climate Change: While normally not considered as a part of the funding provided for in the HCP, increasingly, there is a concern that the management of the habitat acquired under HCP will be required to adapt based on a change in climate. As mentioned above, this change may include a shift from plans that focus on a fixed geographic area and ecosystem to a strategic focus that addresses changing circumstances, with less predictable costs and outcomes.

Federal budgets for conservation must evolve beyond a project-by-project to a programmatic focus.

Sources of Funding

Currently, similar to the path described in the story of the Northern California levies, funding for HCPs is relatively ad-hoc. Each HCP planning group has worked to cobble together the necessary funding for the implementation of its plan.

At the federal level, portions of the Land and Water Conservation funds (from oil and gas production from the Outer Continental Shelf lands) are made available, along with funds from the USFWS budget (through the Cooperative Endangered Species Conservation Fund, Section 6 of the Endangered Species Act). However, only a fraction of these revenues have been made available for HCPs and the aggregate amounts available have not increased over the years. Accordingly, as HCPs have proliferated and expanded in scope, the funding amounts available remain much the same and are more thinly spread (see "*Why Fund Allocation Needs to Increase" on page 40*).

As the extent and magnitude of HCPs have grown, advance project-related funding for HCPs has lessened, increasing the need for early programmatic funding, with provision for later individual project participation and payback.

And, while FHWA policy and most state transportation programs acknowledge the benefits of large-scale advance mitigation for impacts of infrastructure projects, funding practices often frustrate efforts to reach this objective. Because federal grants and capital budgets are generally made on a project-specific basis, and states plan accordingly, there can be no accommodation within project budgets for acquisition of habitat that may be unrelated to present needs. FHWA and, by implication, the States, should be encouraged to meet mitigation requirements through reliance on large-scale mitigation banks or credit pools, or other means of providing advance mitigation.

Further, the Administration has not expressed support for pending legislation to authorize federal loans and loan guarantees for the purpose of acquiring HCP habitat, known as the Infrastructure Facilitation and Habitat Conservation Act. Nonetheless, the concept has been incorporated into the new Water Infrastructure Finance Innovation Act (WIFIA), to be administered jointly by EPA and the USACE, and is a pending amendment of the existing Transportation Infrastructure Finance Innovation Act (TIFIA) program. CEQ and others could be encouraged to announce support for the pending legislation, the TIFIA amendment, and timely implementation of WIFIA.

Further, other funding sources could be made available. For example, in Colorado, transferrable income tax credits are available for the donation of conservation easements to qualifying holders.[52]

To the extent that State funding is available, it tends to be uncoordinated and what little funding is available tends to be provided separately through its infrastructure programs focused on transportation, energy, water and air quality (and climate change). Again, broader funding pools would make sense. For example, in Florida there are provisions for collaboration in the conservation of water resources (including wetlands). This concept could be applied to uplands and a variety of public agencies.

In California, counties have stepped up to fund transportation (and are now the primary funders of highway maintenance) and, increasingly, habitat conservation.[53]

Similar to the lessons from the Northern California levies, individual project proponents have funded individual HCP efforts; however, as the magnitude of the efforts and their regulatory complexities and demands (e.g., for increased detailed research and information) have grown, the willingness of project proponents to provide advance funding for HCPs has diminished. At the same time, while these interests recognize the value of the effort, as with the levy proponents, they cannot or will not individually bear the up-front burdens. They are willing, however, to bear the allocated burden to the extent of the mitigation required with respect to their projects as the projects are realized.

There is a need to develop stable long-term public and private landscape stewardship institutions (with provision for landscape-level monitoring, management and adaptation).

Accordingly, in thinking about the funding of the individual phases of a HCP, as described above, we suggest the following:

- ***Early research, surveys and mapping*** are critical and need to be a shared State and federal undertaking, likely at a State level with the idea of establishing State level guidance and identifying, as suggested above, opportunities and "areas of critical concern" or areas where focused plans and efforts would be helpful in reconciling conservation concerns with possible future infrastructure development or other human activities. This work could be coordinated with the efforts of the State Wildlife Action Plans and the Landscape Conservation Cooperatives (and coordinated with other public agencies and interests, as appropriate) and is consistent with the California Regional Sustainability Initiative of the California Strategic Growth Council, as well as the thrust of the South Florida Ecosystem Restoration effort, etc. providing a State-level framework for further habitat conservation efforts.

- ***Early Advance Mitigation and Conservation efforts*** in concert with anticipated infrastructure and development could be funded and financed from State and federal sources (either as grants, loans or loan guarantees) under financing arrangements such as those discussed below, contemplating repayment, related to mitigation burdens, from tax revenues, project mitigation and impact fees (including ILFs) and credit purchases. Although FHWA policy and most State transportation programs acknowledge the benefits of large-scale advance mitigation for impacts of infrastructure projects, funding practices often contravene this objective. Because federal grants and capital budgets are generally made on a project-specific basis, and States plan accordingly, there can be no accommodation within project budgets for acquisition of habitat that may be unrelated to present needs. FHWA and, by implication, the States, should be encouraged to meet

mitigation requirements through reliance on large-scale mitigation banks or credit pools, or other advance mitigation approaches.

- ***Conservation management*** could be shared among project proponents and the public(s) as established by law, or agreed upon, with the management undertaken by public agencies, non-profit conservation organizations or, perhaps, the project operators.

- ***Subsequent changes*** related to climate change and other circumstances e.g., unforeseen or not under the control of the project operators) need to be considered further. Some have suggested that the burden should be in part, or whole, a cost of the project. Consideration of this suggestion raises foundational questions regarding the function of public institutions as "safety nets" or as providing the means for the public sharing of certain risks related to future uncertainty.

Financing Arrangements: Impact Fees and Mitigation Credits; Mitigation Banks and Credit Pools

While "funding" looks to the sources of money and in-kind mitigation and conservation, "financing" is concerned with the provision of current funding and commitments, expectations and arrangements for future funding and the terms of such arrangements. The following briefly discusses the use of local taxes (real property and sales), Infrastructure Banks, Mitigation Banks and Credit Pools, all of which could be the subject of an HCP or HCP-like arrangement.

Mitigation and Impact and In-lieu Fees ("ILFs").

In addition to provisions for on-site mitigation (the lessening or offsetting of anticipated project impacts or effects), development fees and charges (e.g., ILFs under the CWA)[54] may be required as "compensatory mitigation", including the acquisition and management of lands to mitigate the effects or impacts of a particular project or action. These fees and charges then may be made available for mitigation lands or management acquired by a public agency or conservancy or may be used to repay loans used for this purpose, including the repayment of funds provided for the acquisition of landscape-level habitat as "advance mitigation".

A significant challenge is the comparative valuation of impacts and compensatory mitigation. As indicated, this is especially difficult when working to integrate compensatory mitigation under CWA and ESA, as well as State and local regulations. This topic needs significant further attention.

It is important to note that if land were to be acquired in advance for conservation with public funds, sufficient to fully offset the threat to a species, it could be argued that the habitat has been acquired and conserved and that there would be no basis for requiring, in arrears, further mitigation. Accordingly, the arrangements for compensatory mitigation fees should be put in place at the time of the initial acquisition and dedication of the habitat to conservation, carefully anticipating that the conservation attained will be the basis of mitigation credits or costs to be available or assessed to future projects or activities as compensatory mitigation.

Above: *Sunrise over Steens Mountain, Greater Sage Grouse Lek*

The effect of rangeland fire and invasive plants on sagebrush habitat continue to threaten the survival of the Sage Grouse.

Photo source: the Bureau of Land Management Oregan and Washington.

Commitments of Infrastructure Funding Streams.

Transportation has led in an effort to acquire and conserve habitat in advance, utilizing County sales tax revenues, of landscape-level conservation, and utilizing the related "mitigation credit" for the later mitigation of transportation projects. In thinking more broadly about the allocation of the burdens of conservation, it may be determined that a particular portion (percentage of the costs) should be allocated to and borne by development (perhaps both past and future) within a region. A portion of the costs then could be allocated to the region through property-related taxes or transportation or other charges (e.g., energy, water, etc. or perhaps a "sustainability" charge). The underlying intent would be to fairly distribute the regional burden.

Real Property and Tax Revenues and Bonds.

State real property and real estate transfer taxes (together with the proceeds from bond financing based on such anticipated proceeds) have been used in California, Florida and Texas to acquire and conserve wildlife habitat.

Starting in 1972, Florida created one of the nation's most extensive public acquisition programs for the conservation of habitat conservation, funded by an excise tax on mineral extraction and documentary stamp tax on real estate transfers and utilizing bonds to provide immediate funding. These programs were recently curtailed, but were reactivated, in part, by a 2014 State Constitutional amendment that passed with a 75% affirmative vote of the electorate.[55]

Infrastructure Banks.

Recently, California authorized the establishment of Enhanced Infrastructure Financing Districts, allowing the adoption of an infrastructure financing plan, tax increment revenues, and the issuance of bonds that could be utilized for this purpose.[56]

Mitigation/Conservation Banks and Credit Pools.

The idea of mitigation or conservation banks developed in the 1980s in response to the national regulation of the dredging and filling of waters of the United States and the taking of endangered species. The idea was that wetlands or the habitat of endangered species would be privately-owned and cared for in perpetuity as a Mitigation

or Conservation "Bank" and, in turn, the owner of the Bank would sell mitigation credits " from the Bank as mitigation for the dredging and filling of, or impacts to, other wetlands and the take of endangered species. The concept evolved to include endowments for the perpetual care of the lands conserved and arrangements to keep track of the interests sold. In some states, Banks (including the endowments provided) are regulated.

A similar approach is currently being explored in California that involves the establishment of "pools" of "mitigation credits" based upon the mitigation value of the relinquishment of BLM grazing allotments, with the mitigation credits being tracked by the related county and certain assurances provided to the State regarding the federal lands to be conserved. The distinction between a "Bank" and a "Pool" is that a "Bank" includes provision for both tracking mitigation credits AND the care of the lands underlying the "mitigation" being provided. A "Pool" only tracks the mitigation credits. The "Pool" could be used when the lands are held or owned by a public agency, such as BLM or a State agency.

A key issue with respect to mitigation banks or pools is the establishment of the monetary and conservation value of a mitigation credit and the rules for its use as "currency" (its value in compensating and offsetting certain impacts, defined in terms of the character and magnitude of the conservation benefit). Historically, from the outset of the concept of mitigation (in the late 1960s), mitigation developed as a way to avoid, lessen or offset specific impacts or effects of an action or project on wildlife and wetlands. Initially, this was done project-by-project, requiring extensive and often detailed and intricate measurement of impacts/effects and proposed off-setting mitigation essentially involving a system of project-by-project "bartering". In contrast, the establishment of a mitigation bank or pool provides the basis for a broader system of mitigation, including credits based on more generic habitat values.

Examples of the utilization of "generic" habitat measures include: the use of Coastal Sage Scrub ("CSS") in a Section 4(d) rule as a surrogate in permitting the take of Coastal California Gnatcatchers (five percent of the CSS was allowed to be taken/removed whether or not occupied by federally-listed gnatcatchers and the remainder was to be conserved); and, provision in the Western Riverside Multiple Species Plan that allowed the loss of habitat for "Covered Species", including that of federal and State-listed species (but not including the habitat of "narrow endemic species" or riverine or riparian habitat under Section 404 or the California Streambed Alternation Agreements) provided that adequate progress (as defined by the Plan general as being in "rough step") was being made in conserving 530,000 acres of habitat within the 1.2 million acres comprising Western Riverside County under the Western Riverside MSHCP.

In connection with the early eco-system surveys and research discussed above, it may be possible, in a similar manner, to establish such generic habitat values in relationship to mitigation credits, thereby avoiding the project-by-project pairing of impacts and proposed mitigation.

It would be helpful if the elements (e.g., templates) and practices of such conservation banks and pools could be established under State and federal regulations.

The mitigation banks and pools are important in the context of an HCP in that they provide a more efficient way to acquire landscape-level mitigation and then allocate the costs utilizing the sale of individual credits. This is effective large-scale conservation, while reducing the need for the evaluation of mitigation project-by-project and the cost of mitigation (due to early acquisition of mitigation).

Chapter Four: Management, Monitoring and Enforcement

The effectiveness and continued use of the HCP concept depends on its enforcement.

A longstanding problem with HCP implementation is inadequate transparency and compliance monitoring. Most HCPs and associated monitoring reports are not posted online. Without easy access to these documents, the public cannot readily understand the conservation requirements that permittees must follow or verify compliance with the requirements.

Several studies have shown that USFWS struggles with resources to monitor whether permittees are complying with their conservation commitments. In a 2009 independent evaluation of the HCP program that FWS commissioned, the authors found that nearly 75% of FWS staff surveyed said that they had neither sufficient time nor resources to monitor compliance and implementation of the HCPs they supervised. Resulting issues included "performance data are not tracked and individual HCP data records often contain incomplete sets of data; data that are supposed to be collected often are not and thus many HCP records are incomplete."[58] Except for the Olympia Field Office, the majority of USFWS field offices visited had "no standard operating procedures for validating compliance reports or conducting site visits."

Implementation Agreements are only as effective in reconciling various interests and concerns as their enforceability.

Other researchers have found similar problems at the root of the HCP program, including violations of monitoring requirements and neglect of adaptive management;[59] inadequate use of science;[60] absence of criteria to determine HCP effectiveness;[61] and improper recording of land use restrictions from HCP conservation easements.[62] These problems raise serious questions about the extent to which many HCPs are benefitting covered species, particularly because many HCP mitigation measures are proposed with little to no prior evidence of their effectiveness at offsetting adverse impacts. These problems also question the ability of HCPs to manage for change and uncertainty, particularly in light of climate change. Although there are good examples of HCP monitoring, the absence of attention, resources, and incentives to engage in and disseminate basic monitoring information, let alone adaptive management, is a chronic problem that undermines the legitimacy of the HCP program.[63]

As part of the CEQ Conversation, the suggestion was put forward that at the commencement of each HCP process, a transparent system of record-keeping, monitoring, management and enforcement should be instituted with respect to the HCP and made generally available on-line to the public through-out and following its term.

Chapter Five: Conclusion and Next Steps

USFWS has proposed revisions to its Mitigation Policy[64] and is expected to publish in the near future a revised version of its HCP Handbook. However, it is anticipated that both of these efforts will continue to focus on regulation. What is needed is a broader vision.

The sense of our Dialogue is that DOI and others at the federal, State and local levels should focus increasingly on a broad programmatic, landscape-level approach to habitat planning and conservation in coordination with anticipated future infrastructure and development. In such a programmatic approach, the concepts underlying HCPs make sense; that is, collaborative innovation, focused on geographic-based plans, implemented through multi-agency/interest agreements and addressing wildlife conservation in concert with anticipated infrastructure and development and in consideration of "sustainability" (including, for example, climate change).

Elements of this programmatic/landscape-level approach include:

1. Greater focus on cooperative State/federal early broad-scale (statewide) science and mapping, together with the establishment of information systems (for gathering, managing and the "transparent" sharing of information).

2. State-wide and regional scoping of the conservation of eco-systems in anticipation of infrastructure, development and other human activities and in consideration of sustainability, under the leadership of the respective state and in cooperation with the respective federal and local agencies and others.

3. Early landscape-level acquisition and conservation of wildlife habitat (including provision for advance mitigation, and utilizing, e.g., mitigation banks and credit pools and other arrangements for reimbursement programs).

4. Establishment of early funding and financing mechanisms for early science/mapping, advance landscape-level acquisition for conservation and advance mitigation (with provision for repayment from, e.g., impact fees, in lieu-fees from future development and other sources).

5. Use of more "standard form" HCPs to address more focused areas of concern involving conflicting interests and future uses and activities.

6. Increased collaboration among the respective constituencies of affected local, state and federal agencies and interests (including the better alignment of governance policies and practices); and, increased efforts to better understand the elements of collaboration, including, e.g., principles and practices of dialogue, scoping and related leadership.

The focus at the private and public national, State and local levels should be on broad programmatic approaches based on: collaborative innovation, landscape-level plans, implemented through multi-agency/interest agreements, addressing wildlife conservation in concert with anticipated infrastructure and development … and with a view to "sustainability" and "resilience".

Continued Dialogue is critical in this time of dramatic change resulting from innovation in information technology and deep concerns relating to wildlife conservation, "sustainability" and "resilience".

Suggested immediate next steps of the HCP Dialogue include:

1. Continue research regarding past Habitat Conservation Planning efforts, including, e.g., the five efforts described in Chapter 3 Case Studies:
   - San Francisco Bay-Delta Plan;
   - Chesapeake Bay Program;
   - Multiple State Greater Sage-Grouse Plans;
   - South Florida Eco-system Restoration Program; and,
   - California Desert Renewable Energy Program.
2. Convene (with the Environmental Law Institute as host and in collaboration with others) further small, narrowly focused dialogue sessions regarding:
   - multiple agency programmatic collaboration (regarding permitting, planning and other efforts);
   - funding and financing of the early science and surveying and landscape-level conservation efforts described above; and
   - an exploration of the principles and practices of successful collaboration.
3. Consideration of "pilot" or "model" collaborative HCPs, studies and programs.
4. Possible expansion of the Report into a book.
5. Establishment of a CCG web-site that includes this Draft Report, with the idea that further comments and ideas would be welcomed, vetted and incorporated into the evolving Report (in a Wikipedia-like process)—possibly undertaken as a collaborative effort with other organizations (such as the National Habitat Conservation Planning Association) under the over-sight of a very small review group (e.g., reflecting the spectrum of interests and views involved).

Next Steps:
» **Research case studies;**
» **Further dialogue sessions on multiple agency coordination, funding, the practice of collaboration and, possibly, "sustainability" and "resilience".**
» **Exploration of "pilots" and "models".**

In closing, it appears from the HCP Dialogue, that we need to continue to progress from our focus on silo-like, project-focused, regulatory programs to programmatic planning and implementation efforts, focused on landscape-level conservation in anticipation of infrastructure and development and in consideration of "sustainability." Such an approach calls for early research and mapping, advance landscape-level conservation and mitigation, cooperative funding, multi-agency coordination, collaborative planning among the affected constituency of agencies and interests and, greater integrated and coordinated permitting and transparent monitoring and enforcement.

The design and model of this Dialogue is the same a loose collaboration of those within the affected agencies and interests focused on innovation with respect to the future of Habitat Conservation Planning. Comments by the readers would be welcomed.

Endnotes:

1 Reports by CLEANR on the dialogue sessions include: Alejandro E. Camacho, Elizabeth Taylor and Melissa Kelly, Lessons from Area Wide Multi Agency Habitat Conservation Plans in California, 46 ENVTL. L. REP. 10222 (2016); and, Alejandro E. Camacho, Elizabeth Taylor, Melissa Kelly, & Stephanie Talavera, Emerging Regulatory Experiments in Permit Process Coordination for Endangered Species and Aquatic Resources in California, 46 ENVTL. L. REP. 10131 (2016).

2 See the reference in Appendix A 1 to earlier reports regarding aspects of the Dialogue prepared by CLEANR including "lessons learned" and the financing of HCPs and California Natural Community Conservation Plans. This report is prepared by CCG and focuses primarily on the need for an increasingly programmatic, land scape level approach in the implementation of the HCP concept. The intent of this Report is to reflect the "sense" or synthesis of the input of the more than 100 participants in these sessions, interviews and small meetings. It does not reflect the views of every participant or group of participants. In some instances, the need for more focused studies of specific practices has been suggested, including, for example, enforcement, climate change, the geographic extent of HCPs and the time and expenses expended in their preparation, adoption and implementation. While these more focused topics have been considered in the preparation of this report and more detailed studies may well be helpful, it is clear that more "programmatic" and landscape level approaches to habitat conservation will significantly improve both our efforts to conserve wildlife habitat as well as our ability to efficiently plan and implement infrastructure and other development (and may inform, as well, approaches to sustainability). Perhaps more significantly, a programmatic approach provides a "vision," conceptual framework, or understanding that can be embraced by the varied constituency of affected agencies and interests by all of us.

3 Kelly, Robert, BATTLING THE INLAND SEA (University of California Press, 1998)

4 This same emphasis is expressed in the recent Presidential Memorandum, "Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment" (November 3, 2015): the emphasis on innovative, early, programmatic approaches, beyond project by project ad hoc regulation, to address the conservation of wildlife habitat "simultaneously" with planning for economic development.

5 H.R. REP. No. 97 835 (September 17, 1982) ("Conf. Report), reprinted in 1982 U.S.C.C.A.N. 2960.

6 See sidebar images on Page 1. The South Florida Ecosystem Restoration Project was established, and funded in part, by the Water Resource Development Act of 1996, under the direction of a state, federal and tribal Task Force to direct its implementation. Significantly, Senator Graham and, former Governor of Florida, led the effort to adopt the enabling legislation. The model for this collaborative effort was an earlier HCP effort focused on North Key Largo, Florida, which was established by the Governor's Executive Order when he was Governor of Florida (resulting in the conservation of virtually all of the undeveloped portion of the twelve mile long key) and reflected, as well, other state federal regional efforts (see the references to the Delaware River Basin and Chesapeake Bay Programs above). Prior to the 1996 WRDA legislation, the effort leading up to that federal legislation was undertaken by a Florida Governor's Commission in tandem with a separate federal task force under the direction of George Frampton, then Assistant Secretary of the Interior for Fish, Wildlife and Parks. This institutional structure was thought to be advisable in order to comply with the Federal Advisory Committee Act and was addressed in the federal legislation by the establishment of the State/Federal Task Force.

7 This broader landscape level, programmatic focus is reflected in: Lynn Scarlett et al., LARGE LANDSCAPE CONSERVATION: A Strategic Framework for Policy and Action (Lincoln Institute of Land Policy, 2010); David Hayes, THINKING BIG, Testimony (The Environmental Forum, Environmental Law Institute, November December, 2013); Secretary of Interior, Sally Jewel, Order No. 3330, Improving the Mitigation Policies and Practices of the Department of Interior (Dept. of the Interior, Oct. 31, 2013); JOEL E. CLEMENT, ET AL. A STRATEGY FOR IMPROVING THE MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF INTERIOR; A REPORT TO THE SECRETARY OF INTERIOR FROM THE ENERGY AND CLIMATE CHANGE TASK FORCE (April, 2014); Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Investment (November 3, 2015); and USFWS Notice, Proposed Revisions to the U. S. Fish and Widlife Service Mitigation Policy (Vol. 81, No. 45, Fed. Reg. March 8, 2016. See also, the Western Governors' Species Conservation and ESA Initiative. "Among other things, the initiative will create a mechanism for states to share best practices in species management; promote and elevate the role of states in species conservation efforts; and explore ways to improve the efficacy of the Endangered Species Act. "; and, WGA Policy Resolution 2016 08 regarding Species Conservation and the Endangered Species Act. http://www.westgov.org/initiatives/esa initiative; http://www.westgov.org/images/2016 08 Species Conservation and ESA.pdf

8 See generally, Public Land Law Review Commission, HISTORY OF PUBLIC LAND LAW DEVELOPMENT (1968).

9 Scarlett, Lynn, et al., Large Landscape Conservation: A Strategic Framework for Policy and Action (Policy Focus Report, Lincoln Institute of Land Policy, 2010) (see endnote 7, supra).

10 "The Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) have finalized land use plans that will conserve key sagebrush habitat, address identified threats to the greater sage grouse and promote sustainable economic development in the West. The plans were a critical component that assisted the U.S. Fish and Wildlife Service (USFWS) to conclude that the rangeland bird no longer warrants protection under the Endangered Species Act (ESA)." http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html, 1/30/2016). See graphic, Figure 3.6.

11 See, e.g., Dixon, L., et al., Balancing Environment and Development Costs, Revenues, and Benefits of the Western Riverside County Multiple Species Habitat Conservation Plan (The Rand Corporation, 2008). ("Rand Study"); and, Economic & Planning Systems, Inc., Economic Effects of Regional Habitat Conservation Plans, prepared for the California Habitat Conservation Planning Coalition, 2014; and, [papers by Wachs and Lieberman]. Wachs, M. and Lederman, J., Transportation and Habitat Conserve Plans, Improving Planning and Project Delivery While Preserving Endangered Species (2014).

12 Comments by Dr. W. Spencer, Conservation Biology Institute, in letter to T. Adams, National Habitat Conservation Planning Coordinator, USFWS, dated September 4, 2015.

13 https://www.environment.fhwa.dot.gov/ecological/ImplementingEcoLogicalApproach/default.asp (last time visited, June 11, 2016).

14 E.g., State Wildlife Action Plans are required by federal law in order for a state to receive funds through the Wildlife Conservation and Restoration Program. (http//teaming.com/state wildlife action plans swaps). Landscape Conservation Cooperatives ("LCCs") were established by an order of the Secretary of the Interior in 2010. The 22 LCCs (See the graphic attached as Figure 3.1) collectively form a national network of land, water, wildlife, and cultural resource managers, scientists, and interested public and private organizations within the United States and across international borders that share a common need for scientific information and interest in conservation. As collaboratives, LCCs seek to identify best practices, connect efforts, identify gaps, and avoid duplication through improved conservation planning and design. Partner agencies and organizations coordinate with each other while working within their existing authorities and jurisdictions. http://www.doi.gov/lcc/index.cfm. In addition, NGOs such as The Nature Conservancy and The Conservation Fund, operate nationally to address conservation concerns.

15 See, Pelham, Thomas G., Regulating Areas of Critical State Concern: Florida and the Model Code, Urban Law Annual; Journal of Urban and Contemporary Law, Volume 18 (January, 1980). The "special area" concept is reflected in the provision for Special Area Management Plans in the CZMA and has been applied by USACE in upland areas (E.g., USACE, Guidance Letter O5 09, 2005). This idea of tiering is flexible and may be applied to research and surveying of eco systems, with the idea of identifying areas where further more detailed planning is called for, or it may take a further step and provide that more state regulation or oversight may be or is required with respect to the identified areas. By contrast, in some cases, the tiered planning approach has been preempted from the outset by special management areas which have been established by State legislation and accompanied by special regulations and management. For example, San Francisco Bay, the California Coastal Zone, the New Jersey Pinelands, Lake Tahoe, the Delaware River Basin and Chesapeake Bay.

16 See, the Gateway Basin, Appendix D.

17 Recent efforts, and ideas going forward, within the Department of Interior and more broadly and set forth in footnote 13, supra. Earlier efforts were pursued by California, with respect to the water system in the 1960s's and 1970's, and then the development of information systems regarding its eco systems generally with the "CERES program" in the 1990's (CERES was significantly cut back a decade later during an economic downturn); and, by Florida during the 1970's through the decade following the turn of the Century, focused on the land/water eco system of South Florida. The federal government focused on its federal lands in the late 1960's with Report of the federal Public Land Law Review Commission in 1969 and proposals (for example by Senator Jackson and Robert Ehrlichman, Domestic Advisor on President Nixon's staff) for a new National Land Use Policy and Act toward the end of President Nixon's term, which ended with his resignation (for a discussion of ideas underlying those proposals, see the Mandelker article cited in Appendix C). Currently, the California and federal focus has expanded once again with the increasing concern regarding Climate Change and Sustainability (with the establishment nation wide of the federal DOI Landscape Conservation Cooperatives program). And, of course, there was the environmental revolution of the late 1960's and early 1970's, during which major federal and state legislation was enacted. This time evokes a similar possibility of change.

18 Historically, there has been a sense within the environmental and development communities of "institutional anger", one against the other, with regulatory processes providing the battleground. This stand off may be changing and moving increasingly toward collaboration, whereby there is an appreciation of the value of nature as well as the need for development to accommodate our growing population. In 1994, the regional, State and federal transportation agencies undertook a collaborative planning process, essentially like that used with respect to the San Bruno Mountain HCP, pursuant to 4(f) of the National Transportation Act and Section 106 of the National Historic Preservation Act, to address

concerns regarding impacts to the residence and workshop of Sam Maloof, at the time, the foremost woodworker in the Nation. A plan for its conservation was arrived at after three years and the historic structures were relocated and conserved at significant cost (in excess of $20 million). At the time, some were of the view that Maloof was greedy and that it had cost transportation efforts "dearly". In turn, Maloof, felt a deep anger toward the transportation agencies for disrupting his property and life. Now, 20 years later, there is a common feeling that the six plus acre site with its draught resistant garden, art gallery, historic structures and wood working business (which has carried on Maloof's legacy, producing unique, quality, crafted furniture), is a special, prized, element of the regional community. A similar kind of rivalry has existed in the funding of transportation and eco system efforts with the sense that providing for funding of wildlife habitat through state and federal transportation related legislation takes away from the building of transportation facilities the sense that there is not enough porridge to go around. On the other hand, the passage a San Diego County measure in 2008 [check] to increase local sales taxes to support transportation projects was aided by the inclusion of funding for environmentally related projects evidencing growing collaboration between the two camps.

19 See, as background, Collaboration in NEPA, A Handbook for Practitioners (CEQ, 2007), describing various applications of this idea and sources. Interestingly, in keeping with the times, it appeared to be based on ideas regarding coordination and conflict resolution rather than the concepts underlying collaboration.

20 See, http://www.sustainablecommunities.gov.

21 **Comment**: D. Olson, USACE: "An important challenge is how to use that information in an effective manner. Additional tools or approaches are needed to take the vast amount of available information to help do better planning and decision making. There is also a need to critically evaluate the quality of that data, because some of it might be many years old. Much change in the landscape might have occurred after the data were compiled so that those data no longer accurately reflect the current landscape."

22 "Interestingly, Section 101(a) of NEPA states: "The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly **the profound influences of population growth, high density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality … it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations**, to use all practicable means and measures, including financial and technical assistance, in a manner calculated… to create and maintain conditions under which man and nature can exist in productive harmony...."

23 E.g., the DRECP covers more than 22 million acres in the California Desert with a broad variety of agencies and interests involved. The Bay Delta Conservation Plan involved not only the eco system, but an interest in providing water for the estuary and its wildlife, as well for the San Joaquin Valley the Nation's bread basket, and for a water hungry population in the desert of Southern California. After receiving more than 10,000 comments on a draft EIR for the DRECP, the lead agencies chose to restructure the process and proceed first with a BLM led process for the adoption of a LUPA under FLPMA, covering approximately 16 million acres of DRECP lands. Understandably, this would address land uses within the federal lands administered by BLM and could later be expanded to cover the remainder of the 22.5 million acres envisioned.

24 One reviewer of this paragraph, noted that in researching the HCP processes, they appeared to involve a great deal of hostility and that it was naïve to suggest such collaboration as a standard practice. However, it is clear that the San Bruno Mountain HCP, and others, were characterized by such collaboration and underlying "dialogue". The suggestion is that our practice in this regard is evolving and that collaboration and dialogue should be promoted.

25 **Comment**: D. Olson, USACE: "There are different types of boundaries that need to be considered, such as political boundaries (e.g., states, counties, municipalities), agency boundaries (e.g., resource and activity jurisdiction; regulatory and non regulatory), and ecology based boundaries (e.g., watersheds, eco regions). There may be other types of boundaries that warrant consideration. To promote collaborative efforts among agencies and stakeholders there probably needs to be guidance, agreements, or other types of written documents that give agency staff "permission" or direction to do these more systematic, holistic, collaborative approaches."

26 **Comment**: D. Olson, USACE: "Landscape scale plans aren't going to work if they aren't embraced by the entities that will implement them and the landowners that are affected by the plan. Many larger scale plans end up on a bookshelf or in a file cabinet and aren't used because of lack of commitment or lack of resources to fully implement the plan. If all the relevant participants are involved from the outset, with agreed upon goals and objectives, then there is greater likelihood of implementing the plan. Trade offs and compromises will be needed to develop a plan that has broad acceptability and buy in from participants."

27 **Comment**: D. Olson, USACE: "Agency leadership needs to provide direction to staff on how to do these newer approaches. The collaboration among agencies can begin when the leaders of the participating agencies, along with other stakeholders, work together to develop an overall approach that will guide staff that do the day to day work that accomplishes the objectives of the collaborative management approach to protecting natural resources and moving forward with development and infrastructure."

Three examples of "scoping" that have been employed in collaboration include: the HCP processes addressing wildlife habitat conservation and development on San Bruno Mountain, North Key Largo (the first key off the Florida mainland) and, efforts to address the conservation of the historic home and workshop of Sam Maloof threatened by the development of the 210 Freeway in Southern California. The scoping process regarding San Bruno Mountain was led by San Mateo County and involved the State and federal wildlife agencies, three cities, the landowner, developers and environmental groups. The North Key Largo process was a somewhat formal process convened pursuant to then Governor Bob Graham's Gubernatorial Executive Order and overseen by his Secretary for Community Affairs, while the Maloof process was very informal a series of meetings among the Maloofs, the City of Rancho Cucamonga and the regional, state and federal agencies convened in the historic residence (with Alfreda Maloof serving lemonade and cookies). At the heart of these "scoping" processes was a structured dialogue, regarding concerns, issues, opportunities and alternatives, together with related considerations. In each case, supporting these effort, there was a foundation of growing empathy and mutual "respect" on the part of those involved.

28 See also the report on Large Landscape Conservation, endnote 7, supra, and the website cited (www.lincolninst.edu/subcenters/regional collaboration) for its discussion of regional collaboration and referenced case studies.

29 See www.spk.usace.army.mil: "CWA 404 Permit Strategy Aligned with South Sacramento Habitat Conservation Plan" (USACE, Sacramento District, December 2015).

30 With respect to the broader context of efforts within DOI, see: Clement, J., et al., A Strategy for Improving the Mitigation Policies and Practices of the Department of Interior, A Report to the Secretary of the Interior from the Energy and Climate Change Task Force (April 2014). ("DOI Mitigation Strategy Repprt").

31 See, USACE Regulatory Guidance Letter 05 09, available at: http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05 09.pdf.

32 CLEANR, Roundtable Reflections on the Natural Community Conservation Planning Experience in Southern California (July 15, 2015).

33 The coordination of varied federal and state efforts regarding habitat conservation is important and often complicated. For example, HCPs may provide for wildlife conservation (species, biological communities, eco systems, etc.) beyond required mitigation to provide for species that are or may be listed under the ESA. In Pima County, Arizona, the Sonoran Desert Conservation Plan is a voluntary plan that provided the basis upon which to build the Pima County HCP. In California, the Natural Communities Conservation Planning (NCCP) Act provides for additional, beyond mitigation, conservation and has a "species recovery standard". In some cases, HCP applicants may provide additional, voluntary conservation and include it as a separate document or as an HCP appendix (e.g., the South Sacramento HCP, California). The latter approach may even go beyond the NCCP requirements (e.g. the Yolo County California Local Conservation Plan is a far reaching voluntary addition to the HCP/NCCP for the area.). These approaches extend beyond traditional HCP permitting with much more extensive, landscape scale, conservation. The resulting complexity deserves attention.

34 http://www.chesapeakebay.net.; See also, Presidential Executive Order establishing a Federal Leaders Committee (https://www.whitehouse.gov/ the press office/executive order chesapeake bay protection and restoration) to oversee the development and coordination of programs and activities and to prepare a Strategy for restoring and protecting Chesapeake Bay, in collaboration with the affected states. See, also: Paeffgen, Matthew, A Ringmaster for the Circus: Using Interstate Compacts to Create a Comprehensive Program to Restore the Chesapeake Bay (37 ELR 10888, 2007 (http://eir.info/sites/default/files/articles/37.10888.pdf).

35 See, http://calwater.ca.gov; http://wwwcalfed; http//deltacouncil.ca.gov; and, http://www.californiawaterfix.com.

36 Water Resources Development Act of 1996, Public Law 104 303 (October 12, 1996). http://www.evergladesrestoration.gov/content/tf.html.

37 http://www.evergladesrestoration.gov/. See, Appendix C.

38 http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html

39 http://www.chesapeakeconservancy.org

40 A CWA Regional General Permit was issued by USACE to the East Contra Costa County HCP/NCCP on May 4, 2012 with a 5 year permit term. The suggestion has been made that the CWA permit might structured to be and "ever green" permit that would automatically be extended at the end of each year for a further year (unless otherwise directed by the USACE prior to the extension).

41 For example, the Sacramento District of the ACOE recently issued its memorandum dated December, 2015, entitled "CWA 404 Permit Strategy Aligned with the South Sacramento Conservation Habitat Plan" suggesting a "streamlined" approach that would align the regional HCP framework and compliance with CWA 401 and 404 (including the 404(b)(1) Guidelines), NEPA and Section 106 of the National Historic Preservation Act, utilizing the HCP as well as a regional general permit, Letters of Permission, and an abbreviated process for issuance of standard permits (if required). In the past, the EPA has been reticent to approve impacts to waters of the United States proposed in regional plans based on general proposed uses and has required specific project by project consideration of whether there were other upland sites that could accommodate the specific use (and thereby "avoid impacts to waters of the United States"). [check with EPA on status of this principle]. See Mara J. Hershman, et al., The Search for Predictability, Technical Report, Washington Sea Grant, Univ. of Washington HG 30 (October, 1980).

42 "PECE": Policy for the Evaluation of Conservation Efforts. https://www.fws.gov/endangered/esa library/pdf/PECE final.pdf. [Texas]

43 Lederman, Wachs, J., Schlotterbeck, M., Sciara, G., Task 4 Report: Funding and Financial Mechanisms to Support Advance Mitigation (Institute of Transportation Studies, UC Davis, January, 2015).

44 https://en.wikipedia.org/wiki/National Urban Policy and New Community Development Act of 1970.

45 Comment: J. Hopkins, California HCP Coalition. "There may be situations where using federal lands for mitigation of private lands impacts is appropriate. But they need to be special circumstances where the federal lands that are protected both have very important biological resources and are not properly protected already."

46 With respect to BLM lands, where, e.g., the relinquishment of a grazing allotment could provide compensatory mitigation, the underlying BLM lands may not.

47 E.g., the DRECP and the Greater Sage Grouse effort have both required massive efforts to map and catalogue potential habitat and preferred development sites. Generally this is done using remote sensing technology followed by on the ground surveys; however, some point out that often landowners will not permit such surveys. **Comment, Wayne Spencer,** Conservation Biology Institute: "Mapping of conservation values (e.g., by DRECP) increasingly use sophisticated computer modeling algorithms, not just remote sensing and field truthing. In fact the field truthing is usually woefully underfunded, so we need to rely on modeled coverages with sometimes unknown uncertainties".

48 **Comment**: D. Olson, USACE: Most of the land (roughly 75%) in the conterminous United States is privately owned. There have been studies demonstrating that private landowners bear most of the burdens for wetland regulation, while the benefits apply to all citizens in the area. It is likely that this benefit/burden concern applies to wildlife habitat and other resources as well.

49 In California, there has been increasing interest (e.g., by the California Strategic Growth Council ("CSGC"), the California Biodiversity Council ("CBC"), The Nature Conservancy and others) in developing at the state wide and regional levels, approaches for the early mapping of eco systems, conservation needs, threats and opportunities ("Green Prints"; see, e.g., J. Thorne, et al., The Nature Conservancy/U.C.Davis, Greenprinting in California, Presentation, 2013) and, advance mitigation funding in connection with future state infrastructure (e.g., for water and energy) Regional Advance Mitigation Planning ("RAMP"; see, https://rampcalifornia.water.ca.gov); These efforts of CSGC and CBC could well explore the state level tiering of planning and regulation, providing a kind of conservation "framework", perhaps such as that reflected in Florida's establishment of "Areas of Critical State Concern" and concepts such as "Developments of Regional Impacts". The role of the HCP concepts of multiple agency/interest collaboration and agreements might well be utilized at various levels of this work, e.g.: information gathering, sharing and management; collaborative efforts and agreements focused on specific areas of greater complexity ("focal areas") calling for more detailed and fine grained planning (taking the form of Area wide MSHCPs).

50 See, e.g., the California Desert Renewable Energy Memorandum of Agreement, http://www.drecp.org/documents.

51 E.g., the Environmental Mitigation Program (EMP) of the San Diego Association of Governments ("SANDAG") is an exceptional, innovative, pioneering effort that provides funds through TransNet, a county wide sales tax program, to protect, preserve, and restore native habitats as offsets to disturbance caused by the construction of regional and local transportation projects. The $850 million program began purchasing property in 2008 and has now acquired approximately 3,600 acres around the region at a cost of $117.8 million. Some of the recent acquisitions

go above and beyond required environmental mitigation and are made possible through savings achieved by buying land early, at lower prices, and in larger parcels. http://www.keepsandiegomoving.com (last visited: September 7, 2015). See also, Greer, K., Habitat Conservation Planning in San Diego County, ENVIRONMENTAL PRACTICE (Sept. 2004).

52 See, e.g., C.R.S. 39 22 522.

53 San Diego, Riverside, and Orange Counties, California, transportation sales tax measures to provide funding for conservation.

54 **Comment**; D. Olson, USACE: "In lieu fee (ILF) programs could be a good way to finance larger scale land acquisition efforts, especially for small impacts. Each permitted impact could be required to pay into the in lieu fee program to compensate for small resource losses, and those fees could be pooled together to acquire larger contiguous tracts of land that have important habitat value for the species of concern. See 33 CFR 332.8 for the Corps' regulations governing in lieu fee programs to provide compensatory mitigation in the CWA section 404 permit program. In lieu fee programs might be a better fit for the approaches discussed than mitigation banks. But in lieu fee programs will need to be properly structured so that they accomplish their mitigation commitments." See. Comment, Hugh Crowell, How Do We Integrate HCPs and ILFs Within Watershed Plans? (ELI, National Wetlands Newsletter, Vol. 34, No. 2, 2012) discussing use of ILFs within Watershed Plans and HCPs: "Management of both Mitigation banks and HCPs increasingly relies on the restoration of degraded or historic aquatic resources; yet, there are no clear or consistently applied methods for determining the functional life and the attendant credit schemes to account for the ecological improvements to the natural environment".

55 See Appendix C.

56 Chapter 2.99 (commencing with Section 53398.50 to Part 1 of Division 1 of Title 5 of the California Government Code. (2014).

57 Transparency and the availability of information is also Important in the development and adoption of an HCP. With our increased ability to gather, store and information, it would be helpful to create a public accessible GIS data storage and sharing site available to the affected agencies and interests, which would include information related to its creation and including, as well, the results of subsequent surveying, monitoring and reporting. EPA is currently in the process of developing such programs.

58 Management Systems International, An Independent Evaluation of the U.S. Fish & Wildlife Service's Habitat Conservation Plan Program (Sept. 2009).

59 Alejandro E. Camacho, Can Regulation Evolve? Lessons from a Study in Maladaptive Management, 55 UCLA L. REV. 293 (2007).

60 Peter Kareiva et al., Nat'l Ctr. For Ecological Analysis & Synthesis Working Group, Using Science in Habitat Conservation Plans 5 (1999).

61 Robert McClure & Lisa Stiffler, Troubled Plans, SEATTLE POST INTELLIGENCER, May 4, 2005, at A12.

62 Jessica Owley, Keeping Track of Conservation, 42 Ecology L.Q. (2015).

63 **Comment**: John Hopkins, National HCP Coalition: HCP implementation must be very transparent and the information accessible to all parties, including the general public. Approved HCPs should have oversight from advisory or other committees that include the various stakeholders. Every few years there should be a review of the HCP to determine if it is working this must be a transparent process that the public can see. If an HCP is not working well enough, then the various parties must work out what to do, agreed upon assurances notwithstanding.

64 FWS HQ ES 2015 0126 (March 18, 2016). See also, Clement, J. et al., A Strategy for Improving the Mitigation Policies and Practices of the Department of Interior, A Report to the Secretary of the Interior from the Energy and Climate Change Task Force (April 2014).

Appendix A: Sessions, Meetings and Participants

SESSION I: FEBRUARY 6-7, 2014, THE FUTURE OF HABITAT CONSERVATION PLANNING.

Host: CLEANR, UCI Law, Irvine

Moderators: Lindell Marsh, CCG, and Alejandro Camacho, CLEANR.

Participants:

Trish Adams, U.S. Fish and Wildlife Service; Michael Allen, U.C. Riverside; Lisa Belenky, Center for Biological Diversity; Therese Bradford, US Army Corps of Engineers; Greg Costello, Wildlands Network; Dan Cox, U.S. Fish and Wildlife Service; Joe Edmiston, Santa Monica Mountain Conservancy; Armand Gonzales, Ca. Dept. Fish & Wildlife; Keith Greer, SANDAG; Jordan Henk, Redlands Institute; John Hopkins, California HCP Coalition; Susan Hori, Manatt, Phelps & Phillips, LLP ; Randy Jackson, The Planning Center; Brenda Johnson, Ca. Dept. Fish & Wildlife; John Kopchik, East Contra Costa Habitat Conservancy; Charles Landry, Western Riverside Regional Conservation Authority; Jeff Opdycke, San Diego Zoo Global; Christy Plumer, The Nature Conservancy; Michael Robinson-Dorn, U.C. Irvine; Ed Sauls, The Sauls Company; Melanie Schlotterbeck, Conservation Clarity; Ken Schreiber, Santa Clara Valley Habitat Plan; Dan Silver, Endangered Habitats League; Sean Skaggs, Ebbin Moser + Skaggs, LLP; James Sulentich, Nature Reserve of Orange County; Greg Vail, Selva Partners; Martin Wachs, U.C.L.A.; Paul Weiland, Nossaman LLP; Jill Yung, Paul Hastings.

Report: CLEANR, Lessons from Area-wide Multi-Agency Habitat Conservation Plans in California.

SMALL GROUP MEETING: AUGUST 8, 2014, THE ROLE OF "PILOTS".

Host: The Sam and Alfreda Maloof Foundation for Art and Craft, Rancho Cucamonga, Ca

Moderator: Lindell Marsh, CCG.

Participants:

Hasan Ikhrata, Executive Director and Ping Change, Southern California Association of Governments. Celeste Cantu, General Manager, Santa Ana Watershed Project Authority; Martin Wachs, PhD., Professor Emeritus and Jaimee Lederman, PhD Candidate, UCLA Lewis Center; Rick Bishop, Executive Director, Western Riverside Council of Governments; Ray Wolfe, Executive Director, San Bernardino Associated Governments; and, Tom Hudson, Director, Land Use Services, County of San Bernardino

Memorandum:

SESSION II: DECEMBER 11, 2014, FINANCE STRUCTURE OF HABITAT CONSERVATION PLANNING AND IMPLEMENTATION.

Host: Downey, Brand, Sacramento, California,

Moderators:

CCG: Lindell Marsh,

CLEANR, UCI Law: Alejandro E.Camacho, Director, Professor; Elizabeth Taylor, Atty.; Melissa Kelly, Atty.

UCLA: Martin Wachs, Professor Emeritus; Jaimee Lederman, Attorney and Ph.D. candidate

California Habitat Conservation Coalition: John Hopkins, Director

Participants:

Trish Adams, USFWS, National HCP Coordinator; David Alladjem, Downey, Brand; Dan Cox, USFW, California/Nevada HCP Coordinator; Manley Fuller, President., Florida Wildlife Federation, representing Florida Conservation Coalition; Alen Glen, Attorney, Sedwick, Texas; Denny Grossman, Senior Advisor, Calif. Strategic Growth Council; Brenda Johnson, HCP Chief, Calif. Dept. of Fish and Wildlife; Jennifer Garrison, Transportation Liaison, Cal. Dept. of Fish and Wildlife; Jennifer Johnson, Dudek Associates; Charlie Landry, Western Riverside Resource Conservation Authority; Monica Parisi, Calif. Dept. of Fish and Wildlife; Kristen Pawling, Southern Calif. Assoc. of Governments; Gian-Claudia Sciara, Professor, Transportation Planning, UC, Davis; Paul Weiland, Nossaman; Melissa Thorme, Downey, Brand; and, Douglas Wheeler, Hogan Lovells; former California Secretary for Resources.

SESSION III: JULY 31, 2015, PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY, WASHINGTON, D.C.

Host: Tim Male, CEQ.

Moderators: Tim Male, CEQ, Lindell Marsh, CCG and Alejandro Camacho, CLEANR

Participants:

Timothy Male, Deputy Associate Director for Wildlife, CEQ;Tomer Hasson, DOI, Office of the Secretary; Manisha Patel, CEQ; Elizabeth DePentu, CEQ; Michael Bean, DOI. Chief Deputy Asst. Sec., USFWS; Craig Aubrey, FWS; Trish Adams, FWS, Head of National HCP Office; Bret Birdsong, Assistant Solicitor DOI; Ted Boling, Assistant Solicitor Fish, Wildlife and Parks; Jim Lyons, DOI/Dep.Asst.Sec. Land; Therese Bradford, USBR; Klamath Falls, Ore. (prior: ACOE, USFWS, US Forest Service), USACE; David Olson, Regulatory Manager; James Murley, Executive Director, South Florida Regional Planning Council; Kyle Hathaway, EPA; Palmer Hough, UDDOT; Paul Heberling, Transportation Specialist, Office of the Deputy Secretary for Policy, FHW; Gerald Solomon, Director of Project Development and

Environmental Review, USDOT; Shoshanna Lew, Asst. Sec. for Transportation Policy; Denny Grossman, Office of Planning and Research; California Strategic Growth Council; Lindell Marsh, Center for Collaboration in Governance; Douglas P. Wheeler, Hogan Lovells; Prof. Alejandro Camacho, CLEANR; Prof. Emeritus, Martin Wachs, UCLA; Jaimee Lederman, UCLA PhD Candidate; Elizabeth Taylor, Atty, CLEANR; Melissa Kelly, Atty, CLEANR; Mark Kramer, TNC/California HCP Coalition; Steve Quarles, Nossaman LLC; California Coalition for Habitat Conservation Planning; Jim Pugh, Sheppard Mullin; Ya-Wei Li, Defenders of Wildlife; David Zippin, ICF International; Jim McElfish, Environmental Law Institute (ELI); Kelly Reed, Director of Government Relations, Conservation Fund; Wayne Spencer, Conservation Biology Institute; and, Shannon Eggleston, Director for Environmental Programs and Kate Kurgan, AASHTO.

Ancillary Small Group Meetings, Washington, D.C.: hosted by the Environmental Law Institute; the American Association of State Transportation Officials and the US Department of Transportation, each including participants from from the CEQ session.

ROUNDTABLE: JULY 15, 2015, ROUNDTABLE REFLECTIONS ON THE NATURAL COMMUNITY CONSERVATION PLANNING EXPERIENCE IN SOUTHERN CALIFORNIA.

Host: CLEANR, UCI Law

Moderator: Alejandro Camacho, UCI Law

Participants:

Jim Bartel, U.S. Fish and Wildlife Service (USFWS) (retired); Michael Beck, Endangered Habitats League; Alejandro Camacho, U.C. Irvine; Richard Demerjian, U.C. Irvine; Keith Greer, San Diego Association of Governments; Travis Huxman, U.C. Irvine; Doug Johnson, California Invasive Plant Council; Melissa Kelly, U.C. Irvine; Charles Landry, Western Riverside Regional Conservation Authority; Lindell Marsh, Center for Collaboration in Governance; Monica Parisi, California Department of Fish and Wildlife; Kristine Preston, U.S. Geological Survey; Matthew Rahn, San Diego State University; Jonathan Snyder, USFWS; Jim Sulentich, Nature Reserve of Orange County; Elizabeth Taylor, U.C. Irvine; Rob Thornton, Nossaman LLP; Paul Weiland, Nossaman LLP.

Appendix B: Area-wide MSHCPs Nationwide

TABLE 1.0: LIST OF LARGE-SCALE MSHCPS:

Plan	Primary Covered Activities*	States	Status (Jan 2016)	Size (Ac) (>100,000 ac)
Oregon State Parks Snowy Plover HCP	Recreation	OR	Approved	100,000
AACity of Seattle Cedar River City of Seattle Cedar River HCP	Water Management	WA	Approved	>100,000
Plum Creek Timber HCP	Timber Harvest	WA, ID, MT	Approved	1,690,000
Plum Creek Native Fish HCP	Timber Harvest	Same?	Approved	710,000
Washington Forest Practices HCP	Timber Harvest	WA	Approved	9,300,000
Washington DNR Aquatic Lands HCP	Water Management	WA	Approved	2,600,000
Sonoran Desert Conservation Plan	Urban Development	AZ	In Process	
Pima County MSCP	Urban Development	AZ	In Process	5,900,000
Lower Colorado Multi Species Conservation Plan	Water Management	CA, AZ, NV	Approved	717,000
Clark County MSCP	Urban Development	NV	Approved	5,000,000
Lincoln County HCP	Urban Development	NV	Approved	1,780,000
Washington County HCP	Urban Development	UT	Approved	135,000
Iron County Prairie Dog HCP	Urban Development	UT	Approved	280,960
Mendocino Redwood Company HCP/NCCP	Timber Harvest	CA	In Process	213,240
Yuba/Sutter County HCP/NCCP	Urban Development	CA	In Process	469,271
Placer County Conservation Plan	Urban Development	CA	In Process	275,000
South Sacramento County HCP	Urban Development	CA	In Process	374,000
Solano County HCP	Urban Development	CA	In Process	580,000
East Contra Costa County HCP/NCCP	Urban Development	CA	Approved	175,000
San Joaquin County HCP	Urban Development	CA	Approved	800,000
Santa Clara Valley Habitat Plan	Urban Development	CA	Approved	525,000
Butte Regional Conservation Plan	Urban Development	CA	In Process	564,270
Metro Bakersfield HCP	Urban Development	CA	Approved	262,000
Western Riverside County MSHCP	Urban Development	CA	Approved	1,300,000
Coachella Valley MSHCP	Urban Development	CA	Approved	1,200,000
Southern Orange County HCP	Urban Development	CA	Approved	132,000
San Diego North County MSCP	Urban Development	CA	In Process	345,544
North San Diego MHCP	Urban Development	CA	Approved	<100,000
South San Diego MSCP	Urban Development	CA	Approved	500,000
Yolo County HCP/NCCP	Urban Development	CA	In Process	653,549
San Luis Obispo County HCP/NCCP	Urban Development	CA	In Process	
Humboldt Redwood Company HCP	Timber Harvest	CA	Approved	211,700
Massachussets Beaches HCP	Recreation	MA	In Process	150,000
Pennsylvania State Forest Lands HCP	Timber Harvest	PA	In Process	3,800,000
Midwest Wind Energy HCP	Renewable Energy	8 states	In Process	294,800,000
Great Plains Wind Energy HCP	Renewable Energy	9 states	In Process	268,000,000

Plan	Primary Covered Activities*	States	Status (Jan 2016)	Size (Ac) (>100,000 ac)
Edwards Aquifer HCP	Water Management	TX	Approved	10,758,976
Southern Edwards Plateau HCP	Urban Development	TX	Approved	3,621,699
Williamson County HCP	Urban Development	TX	Approved	726,000
Hays County HCP	Urban Development	TX	Approved	444,000
Balcones Canyonlands Conservation Plan	Urban Development	TX	Approved	633,000
NiSource HCP	Gas and Electric Utilities	14 states	Approved	9,000,000
Pacific Gas & Electric San Joaquin Valley O&M HCP	Gas and Electric Utilities	CA	Approved	276,000
Pacific Gas & Electric Bay Area O&M HCP	Gas and Electric Utilities	CA	In Process	896,000
San Diego Gas & Electric HCP/NCCP	Gas and Electric Utilities	CA	Approved	992,000
Salt River HCP	Water Management	AZ	Approved	<100,000
International Paper HCP	Timber Harvest	AL	Approved	<100,000
State of Georgia Red Cockaded Woodpecker HCP	Timber Harvest	GA	Approved	10,900,000
Florida Beaches HCP	Urban Development	FL	In Process	<100,000
Douglas County HCP	Urban Development	CO	Approved	<100,000
ESA Oil&Gas Coalition HCP	Oil & Gas Development	PA, WV, OH	In Process	25,000,000
American Burying Beetle Oil & Gas Industry Conservation Plan (GCP)	Oil & Gas Development	OK	Approved	22,000,000
Lost Pines HCP	Urban Development	TX	Approved	126,000
Alabama Beach Mouse GCP	Urban Development	AL	Approved	<100,000
Florida Scrub Jay GCP	Urban Development	FL	Approved	<100,000
Karner Blue Butterfly State HCP	Timber Harvest	WI	Approved	7,000,000
Cave Dwelling Bat Forest HCP	Timber Harvest	MI, MI, WI	In Process	
AEP American Burying Beetle HCP	Gas and Electric Utilities	OK, AR, TX	In Process	>100,000
Oncor Utility HCP	Gas and Electric Utilities	TX	Approved	>100,000
Kauai Electric HCP	Gas and Electric Utilities	HI	In Process	350,000
Malpai Borderlands HCP	Rangeland Management	AZ, NM	Approved	500,000 (Arizona), 300,000 (New Mexico)
San Luis Valley HCP	Water Management	CO	Approved	2,000,000
Douglas County HCP	Urban Development	Washington	In Process	2,000,000
Bakersfield Habitat Conservation Plan	Urban Development	CA	In process	2,500,000
Washington DNR Forest Lands HCP	Land Management	WA	Approved	1,600,000
Weyerhaeuser Millicoma Tree Farm HCP	Land Management	OR	Approved	206,000
Bastrop Utilities HCP	Gas and Electric Utilities	TX	Approved	142,256
Comal County RHCP	Urban Development	TX	Approved	326,000
Plum Creek Timber Company HCP	Timber Harvest	LA, AR	Approved	261,000
Potlatch HCP	Timber Harvest	AR	Approved	233,000
Mona Department of Natural Resources and Conservation Lands HCP	Timber Harvest	MT	Approved	560,000
Orange County HCP Central/Coastal	Urban Development	CA	Approved	208,000
San Diego Gas and Electric Quino Checkerspot Butterfly Low Effect HCP	Utility	CA	Approved	208,000

Appendix C: Florida Case Study Summary Overview

South Florida is an integrated blend of land, air and water, with: an elevation ranging to only 14 feet above sea-level at Lake Okeechobee; among the highest levels of bio-diversity in the nation; and, the only ecosystem to support subtropical ecological communities in the continental United States. All particularly vulnerable to changes in humidity, temperature, and precipitation. It is susceptible to hurricanes, floods, and droughts as well as severe growth pressures (the State grew from 2.7 million in 1950 to now about 20 million), and, especially, climate change. As a result, these challenges have resulted in programs, communities and relationships of local, State and federal agencies that provide a valuable case study with respect to habitat conservation planning.

Starting in the mid 1960's, South Florida experienced saltwater intrusion that threatened fresh-water supplies, muck fires, destruction of wetlands, the extensive pollution of almost every river, stream, and water body located in the peninsula, and extensive damage to beaches and dune systems. In response, the state focused on managing the sensitive balance between major population growth, the conservation of natural habitat, and the management of surface water resources. Florida responded with regional conservation efforts, legislation and programs that both mandated comprehensive growth management and provided funding for conservation land acquisition.

The response was at the forefront, nationally, of innovation, embracing ideas (e.g., "Development of Regional Impact" and "Areas of Critical State Concern") that were being developed in connection with the then evolving American Law Institute's Model Land Development Code (and finally adopted in 1976). (Mandelker, D., Fred Bosselman's Legacy to Land Use Reform (Journal of Land Use and Environmental Law, p. 11, 17:1, Fall , 2001). Four key pieces of State legislation followed (with significant support from then State Senator Bob Graham, subsequently Governor and United States Senator, and Professor John DeGrove, his mentor (See generally, Powell, David L., Growth Management: Florida's Past as Prologue for the Future, Fla. St. UL Rev. 28 (2000) and Farr, James and Brock, Greg, Florida's Landmark Programs for Conservation and Recreation Land Acquisition (Kentucky Institute for Environmental and Sustainable Development, University of Louisville, Sustain, 14(2006):

- ***Environmental Land and Water Management Act*** (Chapter 380, Florida Statutes, 1972): providing for the management of environmental concerns with respect to lands and waters of the state, including provisions for the establishment of Areas of Critical State Concern and the Development of Regional Impacts.
    - **"Areas of Critical State Concern":** The state was authorized to designate Areas of Critical State Concern to limit local land use authority. The Florida Supreme Court ruled that this was an unconstitutional delegation to the executive branch, but subsequent State legislation addressed this concern. Local agencies were given six months to develop regulations to protect state-regional interests. Initially limited to a 500,000 total designation area, it was later expanded to 1.8 million acres, an amount equal to 5% of the total land area of the state. The state's first areas of critical statewide concern were Big Cypress Swamp in southwest Florida, Green Swamp in central Florida, and the Florida Keys.
    - **"Development of Regional Impacts (DRIs)":** Empowered Regional Planning Agencies to develop regional plans, for the State to develop a State level plan, and for local governments and Regional Planning Agencies to prepare plans consistent with State policies and programs and to provide for consistency and functional implementation programs. The DRI process, through subsequent expansive legislation, resulted in a powerful tool to assure that developers complied with local, regional, and state development directives. The Development of Regional Impact process was effectively repealed by the 2015 Legislature. Vested rights in formerly approved DRIs were preserved, but developers of large scale projects are no longer required to go through the DRI process. Currently, a "Sector Plan" process exists under Florida Statutes 163.3245,

Florida Statutes for development projects with a land area of 15,000 acres or greater. This process is optional for landowners and developers.

- ***Water Resources Act (Chapter 373, Florida Statutes, 1972):*** established a regional water management and regulatory program based on watersheds with five water management districts ("WMDs") governed by citizen boards appointed by the Governor. Once considered the foremost water management program in the Nation, in 2011 the strength of WMD's was dramatically diminished by budget and staff reductions, and close oversight and supervision by the Governor's Office and Department of Environmental Affairs.

- ***Land Conservation Act (Chapter 259, Florida Statutes, 1972):*** One of the nation's most extensive public lands acquisition programs for the conservation of certain lands, this act includes a provision for funding by the authorization to issue bonds, known as the Environmental Endangered Lands ("EEL") program. A statewide vote authorized an initial bond issuance of $200 million for the acquisition of environmentally sensitive lands, and $40 million in recreation bonds, all to be repaid from the proceeds of a documentary stamp tax on real estate transactions.

- ***Conservation and Recreation Lands Program (CARL) (1979):*** Replaced and expanded the EEL program, centered on a recurring revenue stream placed into a dedicated trust. Until 1987 it received funds from an excise tax on mineral extraction. From 1987 through 1990, it also received funds from documentary stamp taxes on real estate transactions, similar to EEL. From 1979 through 1990, the CARL Program protected approximately 181,000 acres of conservation and recreation lands at a cost of nearly $356 million.

- ***Save Our Coast and Save Our Rivers (1981):*** At the urging of the Governor Bob Graham to expand the State's ability to acquire conservation lands, it authorized a bond issue of $275 million to purchase land along the coast, re-paid by proceeds from a documentary stamp tax on real estate transactions that were dedicated to the Land Acquisition Trust Fund ("LATF"; established in 1963, but funded commencing in 1981). This program resulted in the purchase of over 73 miles of coastline and an increase in state park access to the coast. Under the Save Our Rivers program, the legislature created the Water Management Lands Trust Fund and authorized funding from a real estate documentary stamp tax. Funds were distributed to the five Water Management Districts on the basis of relative population. At present, it has been used to purchase over 1.7 million acres of land held and managed by the water districts, including much of the Everglades.

Additional legislation followed:

- ***State Comprehensive Planning Act (Chapter 23, Florida Statutes, 1984):*** Drafted in 1972 but adopted in 1985 as Chapter 187 of the Florida Statutes, this mandate sets the foundation for growth management planning and provides a clear framework for regional and local land use within a state growth plan. Within the 1986 Glitch Bill (SB 978, Chapter 86-191), it set out to solidify the development, review, and consistency of local, state, and regional plans. "Concurrency" of development and infrastructure was provided for and required that development be accompanied by a finding that current adequate infrastructure is to be in place to service the new development. While not directly a conservation provision, it evidenced the State's focus on comprehensive approaches and suggested a mechanism that has replicated (e.g., in California with respect to a similar water supply concurrency requirement).

- ***Preservation 2000 (1991):*** In response to population growth pressures and rising land prices, coupled with less than ideal acquisition rates, the Commission on the Future of Florida's Environment estimated a need for $5 billion for targeted acquisition. In response, the legislature passed Preservation 2000. Despite recession era belt tightening, Preservation 2000 received funding due to strong voter support of environmental programs. Rather than relying upon a year-to-year collection of revenue from the documentary stamp tax, Preservation 2000 relied upon selling long-term bonds to fund land acquisition. From 1991 to 2000, $3 billion in bonds were sold. Funds went towards the acquisition of outdoor recreation and conservation land. The Florida Communities Trust (FCT) program under the Growth Management Act of 1985 was used for this purpose, receiving funding to assist local governments in the implementation of the conservation, open space, recreation, and coastal elements of the comprehensive plan and CARL and Save our Rivers received additional funding. Preservation 2000 successfully preserved nearly 150,000 acres of land.

- ***Forever Florida (1999):*** created by the State legislature in 1999 to succeed Preservation 2000, authorized the issuance of not more than $3 billion in bonds for land acquisition, water resource development projects, the preservation and restoration of open space and greenways, and for outdoor recreation purposes. The funding was distributed by the Florida Department of Environmental Protection to various state agencies for land acquisition. It is the largest public lands acquisition of its kind in the United States, and as of 2001 had funded the acquisition of over 700,000 acres of land at a cost of $2.89 billion. (http://www.dep.state.fl.us/lands/fl forever.htm)

- ***The South Florida Eco-system Restoration Program:*** In 1983 Governor Graham established the Save Our Everglades ("SOE") Program with the goal of protecting and restoring the Everglades. The Everglades Coalition, consisting of national and state conservation organizations was established in 1984 to assist Florida in implementing the SOE. This effort involved the federal government and in 1992 Congress authorized the review study of the Central and Southern Florida Project by the Corps of Engineers which was completed in 1998. The restudy is the basis of the 1999 Comprehensive Everglades Restoration Plan ("CERP") which is today's Everglades restoration plan. The Governor's Commission for a Sustainable South Florida, appointed by Governor Chiles in 1994 worked closely with the Corps and made substantial recommendations that became a part of CERP. Also, in 1993 Secretary of the Interior Babbitt established a federal task force that was formally established by Congress in 1996 for the purpose of consulting with and providing recommendation to the Corps' review study and CERP. The Corps and South Florida Water Management District, local sponsor of the South Florida Project (the object of the review study and CERP), have the principle responsibilities for implementing CERP. Original estimates were that CERP would cost $8 billion and be completed in 2039, with the federal government and Florida splitting the cost 50/50.

- ***Constitutional Amendment:*** In 2014 voters enacted a constitutional amendment attempting to establish a constitutional requirement for continuation of state environmental land acquisition efforts. Known as "Amendment 1" and the "Water and Land Legacy Amendment", the ballot title read: "Water and Land Conservation - Dedicates funds to acquire and restore Florida conservation and recreation lands". The effect of the amendment was to dedicate 33% of the documentary stamp tax on deeds, mortgages and similar recorded instruments to environmental land purchases and management. Since approval of this amendment by more than 75% of the electorate voting in the 2014 general election, the implementation of this amendment has been frustrated by resistance in the Legislature. The Legislature has attempted to nullify the amendment by diverting most of the revenues (over $800 million annually) to paying for ongoing operations and salaries in several state agencies rather than land acquisition. Several lawsuits against the Legislature and the state are now pending in attempt to enforce the letter and intent of the Constitutional amendment.

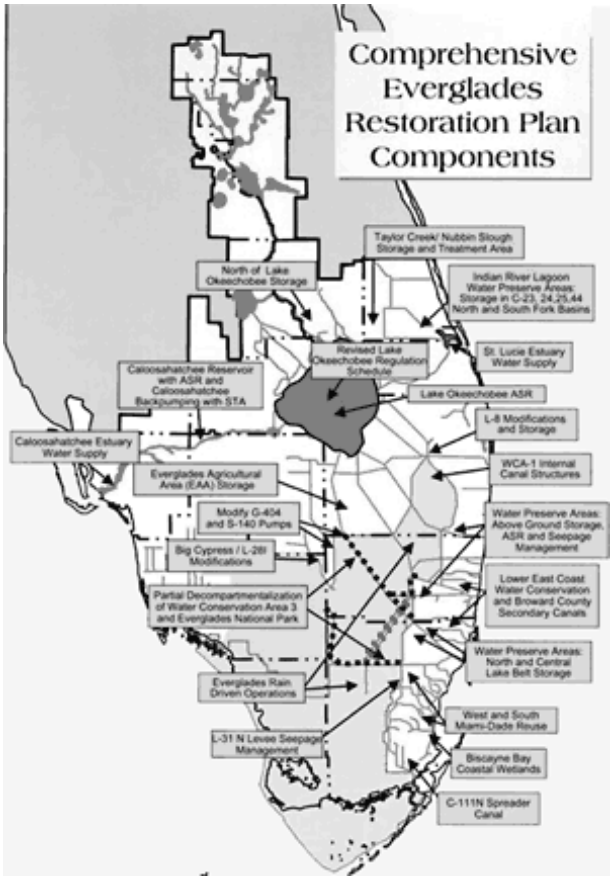
The Role of the HCPs

From the early State legislation of the 1970's, a major focus of the State in addressing conservation has been on both the regulation of Areas of Critical State Concern (such as the Florida Keys) and Development of Regional Impacts coupled with an aggressive program of State-funded land and water-related acquisitions. However, in 1983 under a Gubernatorial Executive Order, then Governor Graham, authorized a collaborative effort to develop an HCP for North Key Largo, the twelve mile key, immediately off the Florida mainland. The Department of Community of Affairs, with DeGrove as Director, was directed to oversee an open collaborative process to develop an HCP by the constituency of affected agencies and interests, included, among others, the major landowners, National and Florida Audubon Societies, the County of Munroe, State and federal agencies. At the end of a two year research and scoping process (looking at concerns, issues, impacts and alternatives), the group came up with two major alternatives that were generally acceptable: total conservation (buy out the landowners) or clustered developed around the four navigable access points on the key, with the development areas to buy-out the remainder and conserve the remaining habitat). The result was that the entire undeveloped portion of the Key was acquired and conserved by the State. Significantly, this collaborative process provided the seeds for the Eastward Ho!/Everglades restoration effort that, in turn, led to the South Florida Eco-System Restoration Program (led in large-part by DeGrove and Graham).

With that major South Florida program underway under the collaboration of State and federal agencies, other formal HCP efforts within the State tended to focus on small individual projects and County-wide HCPs focused on the Scrub-Jay and Beach Mouse (but covering other listed and non-listed species as well).

Comment: P. Adams, USFWS: The 2004/2005 hurricane season put a spot-light on the State's vulnerability under the ESA for their permitting activities associated with the Coastal Construction Control Line program which authorizes coastal construction (private and commercial development), seawalls, dune restoration, etc. Since they occur above MHW, there is no Federal nexus. After threat of litigation by an NGO for non-compliance with the ESA, the State began the ITP process and received HCP Assistance Grants from the Service for the last 8-9 years. The statewide HCP process began around 2005-6 and is the largest HCP in Florida. However, due to lack of support from the state legislature and administration, the effort is floundering and may be abandoned. It is an accurate statement that the Service currently handles ITPs on a project- by-project basis; however, not all of them are small, such as the East Collier Multi-species HCP for Florida panther currently in draft. And ITPs for Charlotte and Walton Counties (check) have been recently issued and the state-wide Florida Beaches HCP is active.

Period of Change



By 2010, the Florida story was changing. It has been reported by conservation interests that State conservation efforts have been significantly curtailed. (Comments by Charles Lee, National Audubon, 2015, generally, as follows): The Department of Community Affairs has been abolished. A small vestige of the duties of DCA has been transferred to the Department of Economic Opportunity. While there is a shell structure suggesting review of local government plans still in the statutes, it is basically nonfunctional under that agency. The Regional Planning Councils have not received State funding for three years and local and regional funding sources are strained. The Forever Florida program remains in the statutes as a framework, but has not been significantly funded in three years. Last year (2014), the Department of Environmental Protection initiated a "land surplus program" which has targeted conservation parcels around the state for declaration of surplus and sale. A number of tracts in the northern Florida Keys were placed on the surplus list. The surplus program is now stalled, but there is still pressure to "sell all unneeded land". The funding of Water Management Districts has been reduced and budgets cut, accompanied by tax rollbacks ordered by the Governor and Legislature. The staffs of some of the districts have shrunk significantly. The districts are functioning on "reserve funds". There are suggestions of walking away from the remaining features of Everglades Restoration. The "Comprehensive Everglades Planning Process" which was initiated to formulate definitive plans to restore flow through the central Everglades by reconnecting the River of Grass by taking down levees and filling canals is meeting significant resistance from agricultural interests.

Significantly, shortly after 2010, the Peninsular Florida LCC was established, providing a place for collaboration among local, State and federal agencies and interests focused on wildlife conservation in and adjacent to Florida (see the broader discussion of LCCs p. ,supra.). Further, former Governor Bob Graham, responsible for much of Florida's landmark conservation efforts, provided leadership in the formation of the Florida Conservation Coalition of environmental groups and others to protect Florida water quality. The Coalition supported the adoption of the Water and Land Conservation amendment to the State Constitution described above to dedicate funding for conservation, management, and restoration of water and land resources. The amendment will provide more than $10 billion for water and land conservation in Florida without any tax increase.

Appendix D: The Role of Science and Mapping

Comments by James R. Strittholt, President, Conservation Biology Institute.

Effective HCPs rely on high-quality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent. Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult. Four major problems have plagued efficient and effective use of these resources including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data sharing and collaboration platform that was developed by the Conservation Biology Institute to address the four major barriers listed above. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing. Users can explore and easily integrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace where they can save all of their content and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs; the most noteworthy being the Desert Renewable Energy Conservation Plan (DRECP) in southern California. This effort, which included the creation of a customized Data Basin "gateway" focused on this geography (www.drecp.databasin.org), resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models. Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process. Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them. As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs such as climate change. Users need more complex topics presented in an easy-to-use application that allows flexible interaction with the content yielding meaningful, actionable results (e.g., California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allows for the incorporation of data through routine field surveys collected by ground crews as well as data from

instrumentation from various types of sensors (e.g., water quality sensors and acoustic sensors for bats and birds). Keeping the data and information up-to-date is critical to a successful HCP and having a durable system to house it all is fundamental.

Without disrupting existing data managing institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management all in a cost effective manner.

Appendix E: Do Habitat Conservation Plans Deserve Wider Implementation?

THE DEBATE

AN EXCERT FROM THE ENVIRONMENTAL FORUM

The first Habitat Conservation Plan under the Endangered Species Act was approved in 1983. It sought to reconcile and manage the conservation of wildlife habitat of over 50 species (including some listed or proposed for listing as threatened or endangered under the ESA) and anticipated development within the 3,000-acre San Bruno Mountain ecosystem south of San Francisco. The effort was a pioneering, collaborative approach relying on two elements: an area-wide geographic plan, jointly developed and implemented by the affected agencies and interests, and a resulting enforceable implementation agreement, providing the basis for public agency approvals and permits. The congressional conference report accompanying the 1982 reauthorization of the ESA stated that the "the San Bruno Mountain Plan is the model" for providing a basis for "incidental take permits" under Section 10 of the ESA, as well as providing a platform for compliance with the regulations of other participating federal, state, and local agencies. For the private sector, it offered predictability and assurances that compatible development could proceed. For environmentalists, it provided greater certainty that species would recover. There are now more than 700 HCPs nationwide, with additional plans in preparation. While a number of HCPs have been based on a more conventional model of bilateral, single-project permits that merely seek to mitigate harm to listed species, the more noteworthy HCPs are landscape-wide and focused on multiple species. These plans each cover hundreds if not millions of acres (with one plan covering an entire state), including urban areas (in California, Texas, and Florida), timberlands (the Pacific Northwest), interstate utility lines and fly-ways (the Midwest and East), energy projects (22.5 million acres in the California desert) and major riparian ways (the Colorado River). As this concept matures, it is outgrowing the adhoc way in which plans have been crafted, funded, and managed. The question is how can this areawide, collaborative HCP concept be improved and implemented to more expeditiously and effectively provide for habitat conservation in concert with needed infrastructure and development?

Alejandro E. Camacho
Professor
University of California (Irvine)
School of Law

VISIONARY BUT FLAWED PROGRAM NEEDS TO EVOLVE

BY ALEJANDRO E. CAMACHO

The Habitat Conservation Plan program has fundamentally changed wildlife management in the United States. The active promotion and proliferation of HCPs may even have saved the Endangered Species Act from repeal by an often hostile Congress.

Many prominent HCPs were innovative experiments in regional governance, seeking to manage the development and conservation of ecosystems across various jurisdictions. Many were formed collaboratively with active participation from a range of interests, at times avoiding the prolonged conflicts over resource use for which the act had often been criticized. A few HCPs even made significant innovations in adaptive management, promoting active monitoring and adjustment over time to account for new information or changed circumstances.

Even so, a number of deficiencies in the program have consistently been given insufficient attention and resources by government authorities and proponents of HCPs, despite how essential these features are to the program's effectiveness. First, key decisions by the Services deem the active participation in planning and implementation of interested parties to be at the option of the applicant. Unsurprisingly, though, a few HCPs — typically larger-scale, with government agency applicants — may be promising examples of the potential of collaborative regulation, for many HCPs interested stakeholders were relegated to a narrow and late role, after the Services and the developer-applicant have negotiated the vast majority of the plan. As such, many HCPs are merely bilateral agreements authorizing the take of important habitat and species.

Furthermore, though monitoring and sufficient funding for implementation are both required under the ESA, they have been systematically neglected. The HCP program relies heavily on permittees to be the principal monitor of the effect of the approved take and the effectiveness of adopted conservation measures, on the premise that permittees have both the incentive and ability to assess conformity with public goals. Sadly, studies show monitoring has been woefully inadequate.

Moreover, though HCPs are regularly adopted under conditions of significant uncertainty, subsequent adjustment of implementation strategies to integrate new information or changed circumstances is rare. The Services have repeatedly acknowledged that adaptive management and contingency planning are valuable, but empirical evidence shows a disinclination to their implementation. Regrettably, recent reviews by the Ecological Society of America and Defenders of Wildlife confirm that weak monitoring and adaptive management are mirrored in the ESA's interagency consultation and endangered species recovery programs.

The trend toward landscape-scale plans is laudable, as there are potentially significant economic and conservation advantages to expanding the scale, species coverage, and duration of HCPs. Yet the increases in complexity and uncertainty from doing so are also considerable and undervalued. A successful HCP program must ensure sufficient resources and incentives for regulators and applicants to promote meaningful participation, monitoring, and adaptive management, including the integration of interested parties in information generation and

implementation. Investment in strategies that promote learning, as well as advanced mitigation, can also reduce uncertainty.

The program's flaws are especially alarming in light of the most significant issue likely to shape the future of habitat conservation: promoting long-term ecological health despite the potentially overwhelming effects of climate change. Because existing HCPs were not designed (and thus do not seek) to account for climate change, they are premised on faulty projections and subject to significantly more uncertainty than projected when approved.

Climate change thus necessitates an intensified commitment by the Services to forecast and manage unforeseen circumstances under theseplans — notwithstanding the limited resources historically dedicated to doing so. Future HCPs must be required to more thoroughly anticipate changing conditions and share the burden of managing such change. The consequences of not doing so will be experienced for decades in light of the horizon for many large HCPs.

Moreover, adapting place-based habitat conservation to ecological change will require large-scale planning that promotes linkages between conservation areas and integrates more dynamic and active conservation measures, such as assisted migration. Even so, a changing climate might ultimately require a fundamental reconsideration of the goals of the HCP program, which have been primarily premised on promoting or restoring species where they have historically occurred. Under the existing ESA, it is unclear how managers will be able to reconcile native and endangered species preservation when these will increasingly be incompatible in changing climatic conditions. More fundamentally, scientists and policymakers — and crucially the public — will ultimately have to grapple with profound questions about what long-term ecological health means, how to best foster it, and who should decide.

Alejandro E. Camacho *is a professor of law and Director of the Center for Land, Environment, and Natural Resources at the University of California, Irvine, School of Law, and a member scholar with the Center for Progressive Re*form.

AN ALL LANDS, ALL HANDS APPROACH

BY JIM LYONS

Nearly 500 million acres of federally administered public lands are managed by the Bureau of Land Management and Forest Service for multiple use and sustained yield. This mandate is particularly challenging to apply. Yet, less well understood is the critical role that federal lands can play in species conservation by anchoring conservation strategies that permit state and private lands to be managed in accordance with less restrictive management measures.

We saw this play out in efforts to protect the Northern Spotted Owl from extinction on forest lands in the Pacific Northwest in the early 1990s and, more recently, in the debate over conservation of the Greater sage grouse across 10 western states.

What is most interesting about these two issues — separated by decades — is how they reflect the evolution of conservation, our growing appreciation for the concept of landscape-level management, and the value of coordination and

Jim Lyons
Deputy Assistant Secretary, Land and Minerals Management
Department of the Interior

collaboration across land ownership and management types. Less appreciated is the important role that federal lands can play in providing private landowners and public land users with greater certainty in meeting economic development goals.

For the spotted owl, the commitment to protect areas of old-growth federal forests (administered by the Forest Service and BLM) from timber harvest benefitted the owl and, as key watersheds, the conservation of various salmonids. The commitment of these biologically rich public lands primarily to habitat protection enabled the Fish and Wildlife Service to develop Habitat Conservation Plans with private and state interests. This permitted greater flexibility in the management of private industrial, non-industrial, and state-administered forests to benefit commerce and meet government trust responsibilities through the development of HCPs.

A similar strategy was adopted to convince the FWS that listing of the Greater sage grouse as threatened or endangered was "not warranted," as the Service determined in September 2015. Research and analysis had demonstrated that while the most important habitat areas for the grouse are scattered across public and private lands, more than half of the remaining sage grouse habitat is on BLM- and Forest Service-administered lands. The vast majority of the remaining lands essential to the bird's survival are privately owned or administered by the states.

Conservation of the grouse and 350-plus other species also associated with the sagebrush ecosystem relies heavily on the protection and restoration of rangeland habitat on public lands as well as the adoption of conservation measures recommended by scientists, wildlife biologists, and resource managers incorporated in new resource management plans. In addition, the Natural Resources Conservation Service, through its Sage Grouse Initiative, provided financial and technical support to implement conservation practices on private lands across the species' range.

To prevent the loss of sagebrush habitat due to rangeland fire — the primary threat to the sage grouse in the Great Basin — states and local interests, private landowners, and federal agencies worked together to develop a science-based, integrated strategy to prevent, suppress, and restore fire-impacted landscapes. Areas of high resistance to fire and climate change were identified and prioritized to improve the efficiency and efficacy of the strategy.

Coordination among federal agencies and collaboration with local, state, and private interests is essential to development and implementation of this conservation strategy. A federal policy team and a state-federal Sage Grouse Task Force provided continued dialogue and collaboration in developing conservation strategies across public and private lands.

This "all lands, all hands" approach to habitat management across the remaining range of the sage grouse permitted greater protection for the bird on federally administered public lands and affords states and private landowners greater flexibility in managing the remaining 40 percent of sage grouse habitat under their care. While the "not warranted" determination provides certainty against "take," since the species is not listed, development of Candidate Conservation Agreements with Assurances on private lands and Candidate Conservation Agreements for federal rangeland permits provides added certainty that should listing be warranted in the future, continued application of the conservation

measures adopted as a part of these plans should allow continued use of these lands without concern for take.

Conservation has advanced in the past three decades as new concepts, tools, and technologies have been developed and applied to strategies to conserve the earth's biodiversity and prevent the listing of threatened and endangered species. The evolution of the concept of landscape-scale conservation; improved application of science and research; use of new technologies, such as modelling and Geographical Information Systems, to improve analysis and understanding of policy options; and greater emphasis on collaboration for bringing stakeholders together have revolutionized efforts to understand and address species and ecosystem needs. Nowhere are these changes more apparent and useful than in managing wide-ranging species on public and private lands.

Jim Lyons *is deputy assistant secretary for lands and minerals management in the Department of the Interior and a lecturer and research scholar at the Yale School of Forestry and Environmental Studies.*

THE FLAPPING OF BUTTERFLY WINGS — 36 YEARS LATER

BY LINDELL MARSH

Lindell Marsh
President
Center for Collaboration in Governance

Thirty six years ago, faced with the proposed listing of the Callippe Silverspot butterfly as endangered under the federal Endangered Species Act, with no take permit available, my client, Visitacion Associates (Sherm Eubanks), in a brief letter, proposed to the Fish and Wildlife Service the preparation of a "Habitat Conservation Plan" covering its domain: the 3,000-acre San Bruno Mountain area, south of San Francisco.

Sherm described the HCP as "a positive management and conservation program approach that will effectively demonstrate the ability of concerned governmental agencies on all levels, as well as other interests, to work together to reconcile the many conflicting interests and concerns, provide guidance as to how these concerns can be included in future planning for similar areas, and assist us to reconcile wildlife considerations with economic and other relevant impacts."

Initially, FWS Director Lynn Greenwalt said no ("the Service doesn't do HCPs") but then agreed to explore it. Little more than two and a half years later, Tom Reid had completed a peer-reviewed study of the plan; Congress had added Section 10(a) to the ESA providing a needed incidental take permit; and together, San Mateo County, three cities, California Fish & Game, FWS (Don Barry), Visitacion, Save San Bruno Mountain Committee (Tom Adams), and I, and my associates Rob Thornton and Susan Hori, saw the environmental assessment and implementation agreement approved and the incidental take permit issued.

Today, there are some 700 HCPs completed or in process, covering millions of acres. But times have dramatically changed. It's time for a more robust programmatic approach to Habitat Conservation Planning.

Today, information is gathered, managed, and shared across the nation (and worldwide), instantaneously, up and down our silo-like institutional hierarchies and across their boundaries — facilitating collaboration. In the same time, our population has grown by almost 100 million. Sustainability is an increasing concern: climate change, air, water, food, and biodiversity; the loss of nature preoccupies us. The principles underlying HCPs are now more relevant than ever — a collaborative approach among agencies and interests, to reconcile human impacts and biodiversity, in the context of sustainability. It's that simple. The question now confronts us: "How best"?

We need to learn from the past, not only from HCPs, but also from earlier national and state efforts: e.g., the proposed national land use policy legislation explored by President Nixon and Senator Henry Jackson (D-WA); the work of Fred Bosselman and the American Law Institute, reflected in Florida statutes; collaborative state/federal efforts with respect to special areas of national concern, such as the Chesapeake Bay watershed and the South Florida Ecosystem Restoration Plan and Task Force; the California Bay-Delta efforts; efforts regarding the deserts of the Southwest (e.g., the Desert Renewable Energy Conservation Plan); and, the recent Sage Grouse Plans.

Moving forward: The HCP experience has been largely ad hoc and focused on regulatory compliance for a specific geographic area. However, the HCP concept is potentially much broader and more "programmatic," including elements focused not only on regulatory compliance but on the formation of frameworks (e.g., by agreements of federal and state agencies and possibly others that address habitat conservation broadly and provide a conservation frame, contemplating, perhaps, multiple subsidiary HCPs and participants). These frameworks could address early and broad scientific ecosystem research and surveys; landscape-level acquisition and conservation in anticipation and advance of infrastructure and development (while ecosystems are intact and the cost is low); and, funding and financing approaches, e.g., similar to past programs for New Towns or in parallel with infrastructure funding, including advance mitigation, credits, and mitigation banks.

In developing such frameworks, we should consider the workings of recently authorized State Water Plans and Landscape Conservation Cooperatives, as well as other efforts such as the Sustainable Communities Partnership (among EPA, Interior, and the Department of Transportation), the Eco-Logical program (DOT and FWS), and the Sage Grouse Plans.

In thinking about the future of Habitat Conservation Planning and these frameworks, the key element is "collaboration." It is based on planning theory, not conflict-resolution, calling for mutual respect among those involved, plus truthfulness, dialogue, and civility. In turn, the centerpiece of the process is scoping, including the collaborative identification of concerns, opportunities, and considerations, scientific research, and the exploration of alternatives. Finally, leadership — not commandand- control oversight, but, rather, bringing to bear a sort of wisdom, an appreciation of the mandate of each participant, together with a sense of compassion and interest in the mandates and concerns of them all.

Collaboration and innovation — we can and should continue to embrace the spirit expressed in Sherm's letter of thirty-six years ago.

Lindell Marsh *is president of the Center for Collaboration in Governance and a practicing attorney at law.*

INCORPORATING RELEVANT LAWS INTO PLANNING

BY T. O'ROURKE BRADFORD

Therese O'Rourke Bradford
Area Manager
Bureau of Reclamation

Habitat conservation planning efforts range from simple single-species plans with one jurisdiction to multiple species HCPs across many jurisdictions. The more complex the plan and the more numerous the jurisdictions, the more complex are the issues for species, tradeoffs between species, jurisdictional alignments, and politics.

Usually, when a jurisdiction completes an HCP, it assumes that federal permitting is complete. When the HCP is part of a state effort, such as in California's Natural Communities Conservation Plan, the expectation includes state permits. In California, jurisdictions usually receive both an HCP and NCCP. These efforts take years and cost millions of dollars.

How, and why, should an already complicated process be expanded to include the other processes and laws? Failure to incorporate the Clean Water Act and the National Historic Preservation Act into HCPs results in delays of the development process, and a loss of funding for conservation efforts. For example, the Western Riverside Habitat Conservation Plan includes a policy that protects riparian species such as the arroyo toad and numerous riparian birds.

However, this policy does not address CWA requirements. Agencies that implement the act, including the Army Corps of Engineers and the California Water Resources Control Board, do not generally participate in the development of HCPs. Therefore, the analysis, mitigation, and environmental impact statements needed under federal and state laws, and needed for the CWA Section 404 and 401 permits, are not included in HCPs.

This lack of coordination creates confusion for developers regarding permits and Endangered Species Act coverage under the HCP. Although the ESA agencies addressed the riparian/riverine issues related to species in the HCP/NCCP, the developers are then required to obtain CWA permits from the corps and the state WRCB, complete additional environmental impact assessments, and provide mitigation for the CWA permits.

Even though these same projects and jurisdictions have ESA coverage under the HCP, the CWA permitting agencies are required to consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to obtain ESA coverage. In some cases, a "streamlined" consultation occurs. In many cases, due to the lack of alignment of the ESA and CWA requirements, or minor or major changes desired by agencies or developers, an informal or formal ESA consultation is required. The consultations take several months to several years to complete.

In California, the DFW issues an NCCP permit for the state's Endangered Species Act. Additionally, they require a streambed alteration agreement. This process is closely aligned with the CWA permits. When developers discover they need an additional permit from the same department that issued the NCCP, they lose confidence and support for the HCP/NCCP.

In Palm Springs, the Coachella Valley Multiple Species Habitat Conservation Plan focuses on maintaining natural processes such as fluvial and aeolian transport and wildlife corridors. The corps was not involved in the negotiations for the HCP; however, the ESA agencies coordinated with the corps regarding future permitting needs for the CWA.

A few years after the HCP was completed, the corps and the Regional Water Quality Control Board worked with the implementing agency to create a CWA-based In-Lieu Fee Program to complement the HCP, assist in funding the plan, and streamline CWA permitting in the area covered by the plan.

There are additional opportunities for jurisdictions with HCPs to work with the CWA agencies to create streamlined permit mechanisms, such as mitigation banks and in-lieu fee programs. Ideally these processes would be done concurrently. However, if the entities involved in the development of HCPs understand other laws and requirements and would work with the other permitting agencies, HCPs could serve as the base document and National Environmental Policy Act access point for other permitting requirements. Tools such as the joint corps- EPA Mitigation Rule can complement and assist in funding.

Additionally, a programmatic agreement, issued by the state historic preservation office for its NHPA requirements, could be created for the area covered by the HCP or in-lieu fee/mitigation bank. This could be another benefit in a coordinated process. Tribal consultation ensures that sacred places and important sites are addressed within the landscape planning effort. This effort can preserve important areas and avoid future development conflicts. HCPs can be a tool in high-resource-conflict areas to address listed species, water allocation, land use, and tribal concerns. Integrating environmental laws and landscapescale planning efforts can be the basis for resolving long-standing resource conflicts. Optimizing analyses, aligning NEPA decisions, and coordinating permitting processes saves time and money and improves conservation.

Therese O'Rourke Bradford *has worked on landscape-level planning efforts for several federal agencies and a nonprofit organization. She now works for the Bureau of Reclamation in Klamath Falls, Oregon.*

Lynn Scarlett
Managing Director, Public Policy
The Nature Conservancy

BIGGER MAY SOMETIMES BE BETTER

BY LYNN SCARLETT

In December, over 190 nations committed to reducing greenhouse gas emissions. These commitments mean new development — of wind, solar, and other energy infrastructure. In the United States, some project wind energy climbing from 4 percent of electric power to 20 percent by 2030. Alongside energy infrastructure, we see burgeoning cities stretching out into the countryside, and new roads to accommodate more people. These trends reflect economic opportunities — and

they respond to the needs of communities. But they also mean land transformation that can fragment wildlife habitat, disrupt water flows, and put species at risk.

As these pressures continue, Habitat Conservation Plans approved by the Fish and Wildlife Service and National Marine Fisheries Service, consistent with the goals of the Endangered Species Act, provide an important vehicle to achieve conservation. These plans set forth how impacts to species listed under the ESA will be avoided, minimized, or offset, while providing a pathway for needed development. Yet effective use of these plans requires some recalibration. Beyond the pace of infrastructure, we see other challenges that unfold at large scales. Vegetative fuel build-up in forests, water quality problems, the many effects of climate change, and the spread of invasive species present interconnected impacts across large landscapes.

The nature of these challenges suggests a need for conservation planning and management regimes at an ecosystem scale. And they point to a need for a multi-species focus to optimize management actions in striving to implement provisions of the ESA.

By 2012, the FWS had approved 710 plans covering over 40 million acres and hundreds of species. Many of these plans focus on a single species on land parcels of less than 100 acres. Just 5 percent of HCPs apply to areas of 100,000 acres or larger. But some pioneering efforts are underway.

The American Wind Energy Association has proposed a Midwest Wind Multi-Species HCP expected to cover some 33,000 megawatts of new power — over 100 new industrial wind farms — and address requirements to mitigate impacts of 13,000 MW of existing wind generation. The agreement involves eight states and eight listed species and would cover impacts from construction through decommissioning.

The natural world is characterized by interconnections, synergies, and interdependence. Species often function interdependently across landscapes and ecosystems. Addressing these issues requires combined public and private actions across jurisdictions and land ownership boundaries. These challenges put a premium on developing tools for cross-jurisdictional, public-private, and private-private coordination and cooperation.

Thus, development of HCPs at large scales is encouraging. And some of these new-style HCPs are anticipatory in nature — that is, their focus goes beyond legal requirements, and they cover non-listed species.

Consider the city of Seattle, which prepared a plan for 83 species (7 listed and 76 unlisted) that addresses a variety of natural resource issues across a 90,545-acre watershed and includes the city's water supply. The plan involved negotiations among five state and federal agencies to integrate and coordinate issues and conservation responses, such as maintenance of instream flows and fish passage.

Also in the Northwest, Plum Creek Timber Company entered into an HCP agreement for 1.6 million acres in Montana, Idaho, and Washington and covering 17 species of native fish, of which eight are listed as threatened or endangered.

In one especially ambitious effort, the FWS approved a plan with NiSource, a large natural gas company, that covers 10 federally listed species along over 15,000 miles of NiSource right-of-way in an area spanning 14 eastern and central states on 9

million acres of land. Development of the plan involved multiple federal agencies in a coordinated process. The approach exemplifies large-landscape cooperative conservation.

These HCPs help align development plans with the scope and integration of analyses and actions needed to improve conservation results. But challenges in assuring their quality and implementation remain. HCP development is often burdensome and time-consuming; performance requirements are sometimes built upon inadequate information and emphasize management prescriptions rather than performance-based outcomes. And accessing multidimensional information at relevant scales is a work in progress.

Moreover, many HCPs do not yet consider climate change and its effects on wildlife. Incorporating adaptive management approaches into HCPs could help those implementing plans incorporate new information and revised threat assessments.

Despite these challenges, the emergence of large-scale HCPs holds promise for applying a conservation lens more consistent with perceiving and addressing interdependencies and ecosystem health. These efforts also have potential to enhance collaborative conservation partnerships, shifting species protection dynamics away from zero-sum debates toward results that protect species, secure healthy lands and waters, and sustain economic opportunity. Therein resides their greatest promise.

Lynn Scarlett *is managing director, public policy, at The Nature Conservancy and served as deputy secretary of the interior.*

James R. Strittholt
President and Executive Director
Conservation Biology Institute

MAPPING TECH KEY TO DATA APPS THAT BUST SILOS

BY JAMES R. STRITTHOLT

Effective HCPs rely on highquality conservation science and rapidly evolving mapping technologies. Advances in both fields have reached a point of potentially transforming how HCPs are developed and implemented at any spatial extent.

Government, academia, and conservation NGOs have led the way in creating and maintaining the most relevant spatial data and information needed for HCPs, but traditional social and political norms have resulted in tremendous barriers to making the best of what we know about species and natural communities and have frequently made meaningful stakeholder participation in the process extremely difficult.

Four major problems have plagued efficient and effective use of these resources, including the lack of data access; a means for easy data integration; an easy-to-use mapping system; and little support for collaboration. The cost of trying to address these fundamental deficiencies has seriously burdened the HCP process in terms of time and money and has often resulted in plans that are ineffective or difficult to implement.

Data Basin (www.databasin.org) is an online conservation data-sharing and collaboration platform that was developed by the Conservation Biology Institute

to address the four major barriers. Data Basin was built to deliver high-quality conservation science to technical and non-technical users alike using maps as the primary currency. Users connect to Data Basin using any of the popular web browsers (no installing of expensive software) for immediate access to over 20,000 spatial datasets and growing.

Users can explore and easily integrate the datasets they find there (even add in their own data if they wish) to create, customize, save, and share their maps. Users are provided with their own private workspace, where they can save all of their content, and they are given total control over how they choose to share their work with others. Private or public working groups can be created and managed by users to allow collaborators to focus on a particular issue, solve a problem, or negotiate an agreement.

Over the last few years, Data Basin has been used to support the creation of HCPs — the most noteworthy being the Desert Renewable Energy Conservation Plan in southern California, or DRECP. This effort included the creation of a customized Data Basin gateway focused on this geography and resulted in the aggregation of nearly a thousand spatial datasets from dozens of sources and numerous, sophisticated spatial models.

Special tools were built to provide maximum transparency of the analytical work while the content was organized in logical ways to help users easily locate and use it. Thousands of stakeholders were given unprecedented access to the inputs to the plan and were provided the means to understand the science behind the planning process.

Plan alternatives were presented to stakeholders via the web resulting in the ability to dynamically explore the findings rather than solely relying on small paper maps. Review tools allowed users to comment on the maps to ask questions, raise objections, or suggest alternative solutions. User comments were then exported in a standard format and easily attached to comment letters. This advancement resulted in much clearer and useful comments and, since they were standardized, made it much easier for the responding agencies to process them.

As transformative as this has been for the DRECP, it is still not enough. There are two other areas that take full advantage of the Data Basin platform.

The first is the need for specialized applications that help interpret the science, especially as it pertains to some of the more complex problems that impact HCPs, such as climate change. Users need complex topics presented in an easy-to-use application that allows flexible interaction with the content, yielding meaningful, actionable results (for example, California Climate Console (www.climateconsole.org/ca)). Another application is currently under development to identify least-conflict lands for renewable energy development throughout California and another one to support mitigation decisions once development has been approved.

The second area is developing tools that allow for easy monitoring of key plan indicators, management actions, and routine updating of data and information to support adaptive management. For example, tools are being built within the Data Basin framework that allow for the incorporation of data through routine field surveys collected by ground crews as well as data from instrumentation from various types of sensors; these include water quality sensors and acoustic sensors

for bats and birds. Keeping the data and information up-to-date is critical to a successful HCP, and having a durable system to house it all is fundamental.

Without disrupting existing datamanaging institutions and the HCP process, Data Basin and its various applications have found a way to bust the silos and provide all HCP participants with access to high-quality science, transparency, inclusive participation, integration of data and ideas, interpretation of important concepts, and the means to actively support adaptive management — all in a costeffective manner.

James R. Strittholt *is president and executive director of the Conservation Biology Institute.*

Martin Wachs
Distinguished Professor, Emeritus
University of California

IT'S ALL ABOUT FINDING THE MONEY

BY MARTIN WACHS

Large-scale ecological protection is costly. Some of the greatest costs come early — those of Habitat Conservation Plan formation, reaching agreements that result in take permits, and acquiring large tracts of land. HCPs covering millions of acres need tens of millions of dollars to support their formation and hundreds of millions more to buy land. The substantial benefits justify these costs but come much later. And, assistance from Endangered Species Act Section 6 grants and similar funding from state programs is becoming harder to get because of stiff competition for fewer dollars.

To find needed front-end funding, HCP planners must partner with agencies and developers whom they once considered to be their opposition. Private land developers and public infrastructure agencies increasingly realize that long-range conservation plans produce substantial savings by enabling commercial developments and infrastructure to be built earlier at lower cost and with fewer legal challenges than when each road, bridge, power plant, or condo complex meets its mitigation obligations in piecemeal fashion. This new attitude can lead to partnerships that facilitate development while protecting species.

An important source of local funding is impact fees levied on land development of residential, commercial, and industrial projects. Fees are collected when building permits are issued for new development. The Riverside County, California, HCP authority, for example, obtains about two-thirds of its revenue from development fees. Clark County, Nevada, charges impact fees on all new development even where it does not directly impinge upon sensitive habitats.

Impact fees suffer from a systematic shortcoming, however. When the economy expands and new development is booming, revenue from impact fees rises but so does the price of land needed to implement the HCPs. During recessions, when development slows, land prices drop and HCP agencies can buy it at lower cost. But, when development slows, so does the flow of impact fee revenue used to buy land. Few sources are available for bridge funding, which would allow HCPs to borrow money for land purchases from willing sellers during economic downturns when prices are low, to be later repaid with interest when the economy improves and revenues from development fees rise.

Establishing low-interest revolving loan funds dedicated to species conservation also would increase infrastructure agencies' access to funding for HCPs. This could

be done under the auspices of state infrastructure banks or through financing by the federal Transportation Infrastructure Finance and Innovation Act. HCPs can also access wetlands conservation loans from a fund established under the Clean Water Act. Establishment of a revolving loan fund dedicated to species protection, perhaps under the ESA, would provide greater access to lowinterest loans for HCPs pursuing efficient, lower-cost land acquisition strategies, and would be especially valuable when development slows.

It is usually necessary for HCPs to piece together funding from disparate sources. Consolidating funding from state and federal programs to enable regional advanced mitigation planning would, for example, be helpful to HCPs and to infrastructure providers. The creation of stateand federal-level conservation clearinghouses might provide one avenue to available grant money, facilitating larger-scale conservation projects and programs while reducing administrative costs to local applicants.

A start on this was made by the still fragile Conserve Florida Water Clearinghouse, a collaboration of the state Department of Environmental Protection and Regional Water Management Districts, created by state legislation to unify water conservation efforts. New York and Washington are state models in this area.

To benefit, HCPs have to work with agencies that build and operate infrastructure and with businesses that develop private land and who in the past have been their adversaries.

Environmental interest groups traditionally opposed ballot measures to finance infrastructure, but recently their support has been instrumental in achieving voter approval of measures that finance infrastructure while also providing funding for HCPs. In California, Orange County's Measure M2 allowed the county to acquire land ripe for development that now will mitigate future construction of roads named in the measure. And San Diego County's TRANSNET sales tax, which will provide over $14 billion for transportation improvement projects, incorporates $650 million in mitigation measures, featuring HCP land acquisition.

Including HCP land acquisition in the TRANSNET sales tax also garnered support for the ballot measure from environmental advocacy groups. This was a notable reversal since environmentalists had traditionally opposed tax measures to fund transportation projects which they believed harmed the natural environment. Changes like these are leading the way forward.

Martin Wachs *is distinguished professor emeritus of city and regional planning and civil and environmental engineering at the University of California, former chairman of the Department of Urban Planning at UCLA, and former director of the University of California Transportation Center.*

Douglas P. Wheeler
Partner
Hogan Lovells US LLP

IT AIN'T BROKE BUT IT SHOULD BE FIXED

BY DOUGLAS P. WHEELER

When administrators of multiple-species Habitat Conservation Plans from around the country met last November to compare experiences and identify obstacles to success, they were the embodiment of remarkable progress in effective use of a oncedormant conservation strategy.

An amendment of the Endangered Species Act, Section 10 authorizes the issuance of "incidental take" permits, but only on condition that applicants prepare a comprehensive HCP to mitigate the adverse effects of otherwise lawful development. Very few ITPs were written until the adoption by Secretary Bruce Babbitt of a "no surprises" policy.

This incentive, which offers binding assurance that an HCP — once written and approved — would suffice to meet the anticipated needs of covered species and their habitats, has had the desired effect. Today, more than 700 HCPs are in place, and, when written to meet the needs of multiple species over a large area, they are a means to achieve species protection while accommodating needed development.

Multi-state HCPs are now in preparation, and the federal government itself — in cooperation with affected states and stakeholders — has embraced multi-state HCPs to resolve otherwise intractable resource conflicts in places like the California Desert and the San Francisco Bay-Delta estuary.

As conferees observed in November, however, this expansive use of HCPs and multi-state HCPs has come at a price. Paradoxically, as plans have become more far-reaching and comprehensive, they have become more costly, time consuming, and controversial.

Today's practitioners have learned to discount assurances in the original HCP Handbook, now 20 years old, that the process is streamlined, flexible, and transparent. They can recount contemporary instances in which plans have languished for years pending approval by multiple levels of authority in several agencies and accumulating costs in the millions. What, then, can be done to correct these defects and restore confidence in this indispensable planning tool? Among participants at the meeting in November, there were at least these three suggestions: to the extent possible, integrate ESA permitting requirements with those of other statutes; delegate to the states increased responsibility for implementation of endangered species programs; and provide federal financial assistance in the form of loans and loan guarantees for habitat acquisition.

Section 10 was not enacted to provide one-stop shopping for resource-related federal permits, or even to include entire ecosystems. But as the scope of multi-state HCP planning has been expanded to include entire watersheds and ecosystems, it has become apparent that integration of permitting processes is not only desirable to reduce regulatory burdens, but necessary in the case of overlapping responsibilities for the same resource.

The National Environmental Policy Act would appear to require this approach, in any event, as it encourages the coordinated preparation of Environmental

Impact Statements. For instance, while the Corps of Engineers' Special Area Management Plans may have served the corps's planning purposes, they did not lead to integration of planning requirements for endangered species, or the coordinated issuance of Clean Water Act Section 404 and ESA Section 10 permits.

More recently, however, the Sacramento District of the corps has proposed to fully integrate its Section 404 responsibility with the South Sacramento Habitat Conservation Plan, eliminating the need for project-by-project ESA Section 7 consultations. In addition, through reliance on the South Sacramento HCP, the corps would achieve programmatic compliance with Section 7, CWA Section 401, and Section 106 of the National Historic Preservation Act.

ESA Section 6 requires that the secretaries of the interior and commerce "shall cooperate to the maximum extent possible" with the states, and provides specific authority for cooperative agreements with states that maintain "an adequate and active program for the conservation of endangered species and threatened species." Though such agreements exist, they are largely the vehicle through which the secretaries provide modest financial support for state programs. At a time when their own resources are constrained, the Fish and Wildlife Service and National Marine Fisheries Service should be encouraged to delegate responsibility for administration of the ESA to states, like California, which have robust programs of their own.

Western Riverside County Regional Conservation Authority, sponsor of an ambitious 146-species HCP, has argued successfully for inclusion in the Water Infrastructure Finance and Innovation Program of authority to use infrastructure loans and loan guarantees for the acquisition of HCP habitat. It has proposed a similar provision for inclusion in the program for support of transportation infrastructure under the Transportation Infrastructure Finance and Innovation Act and stand-alone legislation that would make such assistance available to sponsors of HCPs, whether or not associated with a particular infrastructure project.

Douglas P. Wheeler *is a partner at Hogan Lovells-US LLP in Washington, D.C.*

PLACEWORKS

3 MacArthur Place, Suite 1100, Santa Ana, CA 92707
(714) 966-9220 WWW.PLACEWORKS.COM

To: aurelia_skipwith@ios.doi.gov[aurelia_skipwith@ios.doi.gov]
From: John Scanlon
Sent: 2018-01-17T11:02:33-05:00
Importance: Normal
Subject: DC trip
Received: 2018-01-17T11:02:46-05:00

Dear Aurelia

Greetings and Happy New Year 2018!

I will be moderating an event at UN HQ in NYC on 2 March to celebrate World Wildlife Day 2018. I will call past DC for two days on the way and hope we have the opportunity to catchup once again. I will also be in touch with our colleagues at the US FWS to arrange meetings but thought I would also let you know directly.

Kind regards

John

John E. Scanlon
Secretary-General
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
Maison Internationale de l'Environnement
11-13, chemin des Anemones
1219 Chatelaine-Geneva
Switzerland

Phone: +41 22 917 81 49
Fax: +41 22 797 34 17
Skype: johnscanloncites
Twitter: @John_CITES
Instagram: John_CITES

To: Kemkar, Neal (GE Corporate)[neal.kemkar@ge.com]
Cc: Aurelia Skipwith[aurelia_skipwith@ios.doi.gov]; brian_pavlik@nps.gov[brian_pavlik@nps.gov]; Grace Lee[grace@parktrust.org]; Chuck Knauss[CKnauss@hunton.com]
From: Phil Selleck
Sent: 2018-01-19T08:38:44-05:00
Importance: Normal
Subject: Re: Thank you!
Received: 2018-01-19T08:39:16-05:00
About NPT Land and BBSP.docx
NPT_2016_AR_FINAL.pdf

Aurelia and Brian,
I echo Neal's thanks for your time yesterday. I am attaching a brief summary about NPT, and a copy of our 2016 annual report. Please send me an email of give me a call if you have any questions.

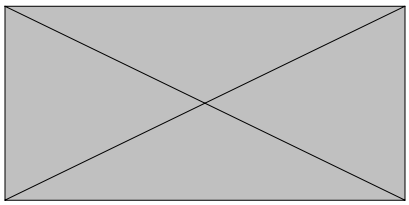
Grace, anything to add?

Thanks again,

Phil

Philip A. Selleck
Park Projects Director
National Park Trust
401 East Jefferson Street, Suite 207
Rockville, MD 20850
301-279-7275, ext.14
301-279-7211, fax
www.parktrust.org
phil@parktrust.org

CFC Code 12213



On Thu, Jan 18, 2018 at 5:08 PM, Kemkar, Neal (GE Corporate) <neal.kemkar@ge.com> wrote:

> Aurelia and Brian: thanks so much for taking the time to meet the National Park Trust team earlier today. As promised, connecting you both with the team, who will share more information. Look forward to continuing the conversation.

Best, Neal

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2016 ANNUAL IMPACT REPORT

Buddy Bison students paddling on the Anacostia River (MD).

NATIONAL PARK TRUST

TREASURE FOREVER.

“Conservation today means far more than just preserving our natural resources. It means their wise use and protection so that more and more people may enjoy and benefit from them. Only in so doing may our individual human resources be enriched.”

— LAURANCE S. ROCKEFELLER,1955

OUR MISSION:

PRESERVING PARKS TODAY; CREATING PARK STEWARDS FOR TOMORROW

OUR VISION:

EVERYONE WILL HAVE AN AMERICAN PARK EXPERIENCE

Buddy Bison students explore the Jefferson National Expansion Memorial (St Louis, MO).

FROM OUR BOARD AND STAFF

Dear Friends:

The historic year of the **Centennial of the National Park Service** (NPS) was epic not only for NPS but also for **National Park Trust** (NPT) due to the extraordinary support from our wonderful donors, sponsors, and program partners. Thank you!

Working together we achieved numerous important milestones, many of which are highlighted in this year's **Annual Impact Report** including:

- The completion of several land acquisition projects that benefit **Indiana Dunes National Lakeshore** and **Yosemite National Park**, plus at the very end of 2016 we provided key funding to purchase an important 12.5 acre parcel within **Rocky Mountain National Park**, which when transferred to NPS will become federal wilderness. See page 6.

- The expansion of our **Buddy Bison School Program** to include 60 Title I elementary and middle schools thanks to **NPS Challenge Funds** that were matched dollar for dollar by your important gifts. See page 8.

- The opportunity to get even more 4th graders connected to national parks and other public lands and waters in their communities thanks to additional support for **President Barack Obama's Every Kid in a Park** initiative. See page 9.

- The tremendous growth of **Kids to Parks Day** which was celebrated on May 21, 2016 with more than 731,000 participants at over 1,130 park events across the country. Plus 100 grants were awarded by NPT to 74 Title I schools as winners of our **Kids to Parks Day National School Contest**. See page 10.

2016 NPT board members at Mississippi National River and Recreation Area's Coldwater Spring (Fort Snelling, MN).

- The recognition of the impact of our national youth programs by the **Outdoors Alliance for Kids** (OAK) with an inaugural **OAK Leaf Award**. See page 4.

- The spotlight on one of our newest Buddy Bison Schools, **Pennycook Elementary** in a feature aired by **PBS NewsHour** as they explored **Muir Woods** (CA). See page 4.

Finally, we were delighted to be able to recognize two outstanding park stewards: **Secretary Sally Jewell** with our **American Park Experience Award** and **Congresswoman Betty McCollum** (MN, 4th District) with the 16th **Bruce F. Vento Public Service Award**. See page 5.

As you can see, thanks to your outstanding support, it was a whirlwind year for National Park Trust. We look forward to our continued partnership in 2017 to benefit our national parks and kids across the country!

With deep gratitude,

Bill Brownell, Chair

Ann Gualtieri, Vice Chair

Grace Lee, Executive Director

TOP 10 HIGHLIGHTS FOR 2016

1 CELEBRATING THE NPS CENTENNIAL

In 2016 we joined the nation in celebrating the **National Park Service** (NPS) **Centennial.** Since our **Buddy Bison School Program** and **Kids to Parks Day National School Contest** were selected as **NPS Centennial Challenge Projects,** NPS matched every dollar that we raised up to $450,000. As a result, $900,000 were used for the tremendous expansion of our youth programs. See page 8.

Baltimore (MD) students celebrate the NPS Centennial on August 25, 2016 at Fort McHenry with Superintendent Tina Cappetta thanks to support from Caesars.

Rocky Mountain National Parks' Wild Basin area, photo courtesy of Karen Fisher.

2 MAKING ROCKY MOUNTAIN NATIONAL PARK A LITTLE MORE WILD

NPT provided the last piece of critical funding needed to acquire a high priority inholding in **Rocky Mountain National Park** (CO) that will add 12.5 acres to the Wild Basin area. See page 6.

3 TEAMWORK YIELDS ONE OF THE LARGEST EXPANSIONS TO YOSEMITE NATIONAL PARK

Working with The Trust for Public Land and other partners, NPT assisted in the acquisition of the 400 acre **Ackerson Meadow Yosemite's** largest expansion in 70 years and home to the endangered great grey owl. See page 7.

Ackerson Meadow's vast 400 acres, now a part of Yosemite (CA), photo courtesy of Robb Hirsch.

4 KIDS TO PARKS DAY PARTICIPATION SOARS

Kids to Parks Day 2016 soared to more than 731,000 participants. Celebrated annually on the third Saturday in May (May 21, 2016), NPT worked with 18 national collaborators to get kids across the country to discover their parks locally and nationally. Save the date: Kids to Parks Day 2017 is May 20th! See page 10.

4th graders with their new Every Kid in a Park passes at Gateway National Recreation Area (NY).

Deputy Superintendent Frank Young awards park passes to D.C. kids at Rock Creek Park.

5 GETTING EVERY KID IN A PARK

2016 brought the second year of **President Obama's Every Kid in a Park** initiative. NPT partnered with numerous organizations to provide 4th graders with their free passes and park trips across the country. See page 9.

6 NPT RECOGNIZED FOR OUR WORK TO GET KIDS TO PARKS

During the NPS Centennial year, NPT was honored to be recognized in many ways: 1) **Outdoors Alliance for Kids** (OAK) presented NPT with an inaugural **OAK Leaf Award** which recognized our "leadership and collaboration in connecting kids with nature." 2) Executive Director Grace Lee was a panelist at the OAK meeting at the **White House** which focused on youth outdoor programs during the **Obama Administration**. 3) **Correspondent Kavitha Cardoza** featured our efforts to get kids to parks on **PBS NewsHour** highlighting Buddy Bison School **Pennycook Elementary's** visit to Muir Woods. 4) Finally, **Buddy Bison** and ***Buddy Bison's Yellowstone Adventure,*** written by **Dr. Ilona Holland** and published by **National Geographic Kids,** were featured on the **Today Show** as two of **Hoda Kotb's** favorite things.

Recipients of inaugural OAK Leaf Awards include: (left to right) REI, Children & Nature Network, National League of Cities, NPT, and The North Face.

(Left to right) Michael Degnan (WH CEQ), George McDonald (NPS), Meryl Harrell (USDA), Grace Lee (NPT), and Eric Somerville (YMCA) participate in a panel discussion at the White House.

Buddy Bison students from California featured by Correspondent Kavitha Cardoza on PBS NewsHour as they explored Muir Woods National Monument.

On the Today Show, Hoda Kotb features Buddy Bison and Buddy Bison's Yellowstone Adventure *as two of her favorite things.*